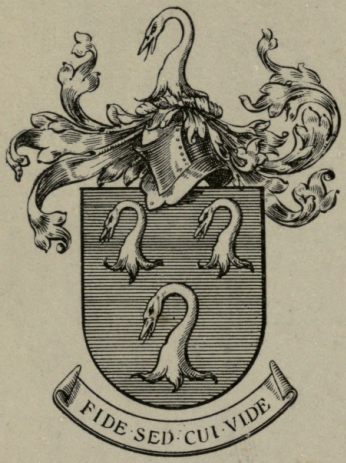
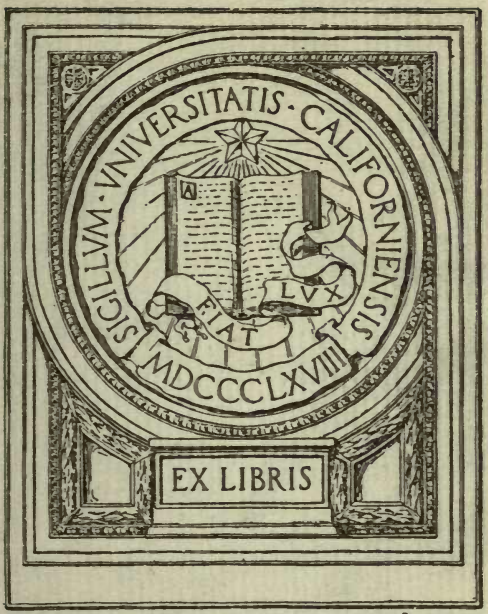
BIRD LIFE GLIMPSES



Septimus Hedges
Sunbury on Thames



BIOLOGY
LIBRARY
G

BIRD LIFE GLIMPSES

BIRD LIFE GLIMPSES

BY EDMUND SELOUS

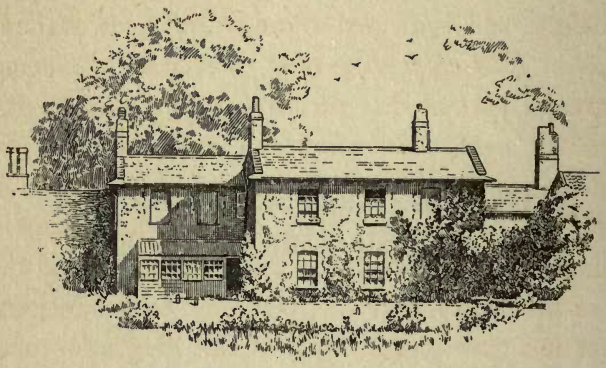
WITH 12 HEADINGS AND 6 FULL-PAGE ILLUSTRATIONS BY G. E. LODGE

LONDON: GEORGE ALLEN, 156 CHARING CROSS ROAD. MCMV

[All rights reserved]

QL690
G7S43

BIOLOGY
LIBRARY
G



FLINT HOUSE, ICKLINGHAM

PREFACE

In the autumn of 1899 I came to live at Icklingham in Suffolk, and remained there, with occasional intervals of absence, for the next three years. During the greater part of that period I kept a day-to-day journal of field observation and reflection, and the following pages represent, for the most part, a portion of this. They are the work of one who professes nothing except to have used his eyes and ears to the best of his ability, and to give only, both in regard to fact and theory, the result of this method—combined, of course, in the latter case, with such illustrations and fortifications as his reading may have allowed him to make use of, and without taking into account some passing reference or allusion. That my notes relate almost entirely to birds, is not because I am less interested in other animals, but because, with the exception of rabbits, there are, practically, no wild quadrupeds in England. I am quite aware that a list can be made out, but let any one sit for a morning or afternoon in a wood, field,

746322

marsh, swamp, or pond, and he will then understand what I mean. In fact, to be a field naturalist in England, is to be a field ornithologist, and more often than not—I speak from experience—a waster of one's time altogether. Unless you are prepared to be always unnaturally interested in the commonest matters, and not ashamed to pass as a genius by a never-ending barren allusion to them, be assured that you will often feel immensely dissatisfied with the way in which you have spent your day. Many a weary wandering, many an hour's waiting and waiting to see, and seeing nothing, will be yours if you aim at more than this—and to read a book is fatal. But there is the *per contra*, and what that is I know very well. Of a few such *per contras*—they were to me, and I can only hope that some may be so to the reader—these "Bird Life Glimpses" are made up.

EDMUND SELOUS.

CHELTENHAM, *May* 1905.

LIST OF ILLUSTRATIONS

FULL-PAGE ILLUSTRATIONS

"AT THE QUIET EVENFALL" . . . *To face page* 8
Wood-Pigeons coming in to Roost

THE RULES OF PRECEDENCE . . . „ „ 54
Hooded Crows and Rooks Feeding

A GRAND DESCENT . . . . . „ „ 80
Herons coming down on to Nest

A STATUESQUE FIGURE . . . . . „ „ 119
Snipe, with Starlings Bathing, and Peewits

INDIGNANT . . . . . „ „ 131
Starling in possession of Woodpecker's Nesting Hole

A PRETTY PAIR . . . . . „ „ 198
Long-Tailed Tits Building

CHAPTER HEADPIECES

PAGE

PHEASANT ROOSTING 1

YOUNG NIGHTJARS 21

ROOKS AT NEST 51

HERON FISHING 72

PAGE

MALE WHEAT-EAR 106

A "MURMURATION" OF STARLINGS 129

PEEWITS AND NEST 163

COAL-TIT 194

GREEN WOODPECKER 224

MARTINS BUILDING NEST 239

MOORHEN AND NEST 261

DABCHICKS AND NEST 296

PHEASANT ROOSTING

BIRD LIFE GLIMPSES

CHAPTER I

ICKLINGHAM, in and about which most of the observations contained in the following pages have been made, is a little village of West Suffolk, situated on the northern bank of the river Lark. It lies between Mildenhall and Bury St. Edmunds, amidst country which is very open, and so sandy and barren that in the last geological survey it is described as having more the character of an Arabian desert than an ordinary English landscape. There are, indeed, wide stretches where the sand has so encroached upon the scanty vegetation of moss and lichen that no one put suddenly down

amongst them would think he were in England, if it happened to be a fine sunny day. These arid wastes form vast warrens for rabbits always, whilst over them, from April to October, roam bands of the great plover or stone-curlew, whose wailing, melancholy cries are in artistic unison with their drear desolation. The country is very flat: no hill can be seen anywhere around, but the ground rises somewhat, from the river on the northern side, and this and a few minor undulations of the sand look almost like hills, against the general dead level. I have seen the same effect on the great bank of the Chesil, and read of it, I think, in the desert of Sahara. These steppes on the one side of the river pass, on the other, into a fine sweep of moorland, the lonely road through which is bordered, on one side only, by a single row of gaunt Scotch firs. Westwards, towards Cambridgeshire, the sand-country, as it may be termed, passes, gradually, into the fenlands, which, in a modified, or, rather, transitional form, lie on either side the Lark, as far as Icklingham itself.

The Lark, which, for the greater part of its limited course, is a fenland stream, rises a little beyond Bury (the St. Edmunds is never added hereabouts), and enters the Ouse near Littleport. It is quite a small river; but though its volume, after the first twelve miles or so, does not increase to any very appreciable extent, the high artificial banks, through which, with a view to preventing flooding, it is made to flow, after entering the fenlands proper, give it a much more important appearance, and this is enhanced by the flatness of the country on either side: a flatness, however, which does not—nor does

it ever, in my opinion—prevent its being highly picturesque. Those, indeed, who cannot feel the charm of the fenlands should leave nature—as distinct from good hotels—alone. For myself, I sometimes wonder that all the artists in the world are not to be found there, sketching; but in spite of the skies and the windmills and Ely Cathedral in the near, far, or middle distance, I have never met even one. It is to the fens that the peewits, which, before, haunted the river and the country generally, retire towards the end of October, nor do they return till the following spring, so that Icklingham during this interval is almost—indeed, I believe quite—without a peewit. Bury is eight miles from Icklingham, and about half-way between them the country begins to assume the more familiar features of an English landscape, so that the difference which a few miles makes is quite remarkable.

Fifty years ago, I am told, there were no trees in this part of the world, except a willow here and there along the course of the stream, and a few huge ones of uncouth and fantastic appearance, which are sometimes called "she oaks" by the people. The size of these trees is often quite remarkable, and their wood being, fortunately, valueless, they are generally allowed to attain to the full of it. They grow sparingly, yet sometimes in scattered clusters, and the sand, with the wide waste of which their large, rude outlines and scanty foliage has a sort of harmony, seems a congenial soil for them. They are really, I believe, of the poplar tribe, which would make them "poppels" hereabouts, were this understood. These trees, with

some elders and gnarled old hawthorns, which the arid soil likewise supports, rather add to than diminish the desolate charm of the country, and, as I say, till fifty years ago there were no others. Then, however, it occurred to landowners, or to some local body or council, that sand ought to suit firs, and now, as a consequence, there are numerous plantations of the Scotch kind, with others of the larch and spruce, or of all three mingled together.

Thus, in the more immediate proximity of Icklingham we have the warrens or sandy steppes, the moorlands passing here and there into green seas of bracken, the river, with a smaller stream that runs into it, and these fir plantations, which are diversified, sometimes, with oaks, beeches, and chestnuts, and amidst which an undergrowth of bush and shrub has long since sprung up. Beyond, on the one hand, there are the fenlands, and, on the other, ordinary English country. In all these bits there is something for a bird-lover to see, though, I confess, I wish there was a great deal more. The plantations perhaps give the greatest variety. Dark and sombre spots these make upon the great steppes or moors, looking black as night against the dusky red of the wintry sky, after the sun has sunk. In them one may sit silent, as the shadows fall, and see the pheasants steal or the wood-pigeons sweep to their roosting-trees, listening to the "mik, mik, mik" of the blackbird, before he retires, the harsh strident note of the mistle-thrush, or the still harsher and more outrageous scolding of the field-fare. Blackbirds utter a variety of notes whilst waiting, as one may say, to roost. The last, or the

one that continues longest, is the "mik, mik" that I have spoken of, and this is repeated continuously for a considerable time. Another is a loud and fussy sort of "chuck, chuck, chuck," which often ends in almost an exaggeration of that well-known note which is generally considered to be the one of alarm, but which, in my experience, has, with most other cries to which some special meaning is attributed, a far wider and more generalised significance. As the bird utters it, it flies, full of excitement, to the tree or bush in which it means to pass the night, and here, whilst the darkness deepens, it "mik, mik, mik, mik, miks," till, as I suppose, with the last "mik" of all, the head is laid beneath the wing, and it goes peacefully to sleep. It is now that the pheasants come stealing, often running, to bed. You may hear their quick, elastic little steps upon the pine-needles, as they pass you, sometimes, quite close. I have had one run almost upon me, as I sat, stone still, in the gloom, seen it pause, look, hesitate, retreat, return again, to be again torn with doubt, and, finally, hurry by fearfully, and only a pace or two off, to fly into a tree just behind me. This shows, I think, that pheasants have their accustomed trees, where they roost night after night. In my experience this is the habit of most birds, but, after a time, the favourite tree or spot will be changed for another, and thus it will vary in a longer period, though not in a very short one. This, at least, is my idea; assurance in such a matter is difficult. The aviary may help us here. Two little Australian parrakeets, that expatiate in my greenhouse, chose, soon after they were introduced,

a certain projecting stump or knob of a vine, as a roosting-place. For a week or two they were constant to this, but, after that, I found them roosting somewhere else, and they have now made use, for a time, of some half-dozen places, coming back to their first choice in due course, and leaving it again for one of their subsequent ones. Part of this process I have noticed with some long-tailed tits, which, for a night or two, slept all together, not only in the same bush but on the same spray of it. Then, just like the parrakeets, they left it, but I was not able to follow them beyond this. It would seem, therefore, that birds, though they do not sleep anywhere, but have a bedroom, like us, yet like variety, in respect of one, within reasonable limits, and go "from the blue bed to the brown."

Pheasants are sometimes very noisy and sometimes quite silent in roosting, and this is just one of those differences which might be thought to depend on the weather. For some time it seemed to me as if a sudden sharp frost, or a fall of snow, made the birds clamorous, but hardly had I got this fixed, as a rule, in my mind, when there came a flagrant contradiction of it, and such contradictions were soon as numerous as the supporting illustrations. I noticed, too, that on the most vociferous nights some birds would be silent, whilst even on the most silent ones, one or two were sure to be noisy, so that I soon came to think that if their conduct in this respect did not depend, purely, on personal caprice, it at least depended on something beyond one's power of finding out. The cries of all sorts of birds are supposed to have something to do with the

weather, but I believe that any one who set himself seriously to test this theory would soon feel like substituting "nothing" for "something" in the statement of the proposition. It is much as with Sir Robert Redgauntlet's jackanape, I suspect—"ran about the haill castle chattering, and yowling, and pinching, and biting folk, specially before ill weather or disturbances in the state." Every one knows the loud trumpety note, as I call it, with which a pheasant flies up on to its perch, for the night. It is a tremendous clamour, and continues, sometimes, for a long time after the bird is settled. But sometimes, after each loud flourish, there comes an answer from another bird, which is quite in an undertone; in fact a different class of sound altogether, brief, and without the harsh resonance of the other, so that you would not take it to be the cry of a pheasant at all were it not always in immediate response to the loud one. It proceeds, too, from the same spot or thereabouts. What, precisely, is the meaning of this soft answering note? What is the state of mind of the bird uttering it, and by which of the sexes is it uttered? It is the cock that makes the loud trumpeting, and were another cock to answer this, one would expect him to do so in a similar manner. It is in April that my attention has been more particularly drawn to this after-sound, so that, though early in the month, one may suppose the male pheasant to have mated with at least a part of his harem. One would hardly expect, however, to find a polygamous bird on terms of affectionate connubiality with one or other of his wives, and yet this little duet reminds me, strongly, of what one

may often hear, sitting in the woods, when wood-pigeons are cooing in the spring. Almost always they are invisible, and it is by the ear, alone, that one must judge of what is going on. Everywhere comes the familiar "Roo, coo, oo, oo-oo," and this, if you are not very close, is all you hear, and it suggests that one bird is sitting alone—at least alone in its tree, though answered perhaps from another. Sometimes, however, one happens to be at the foot of the tree oneself, and then, if one listens attentively, one will generally hear a single note, much lower, and even softer than the other which precedes it, a long-drawn, hoarse—but sweetly, tenderly hoarse—"oo." The instant this has been uttered, comes the note we know, the two tones being different, and suggesting —which, I believe, is the case—that the first utterance is the tender avowal of the one bird, the next the instant and impassioned response of the other.

There is, perhaps, as much monotonous sameness —certainly as much of expressive tenderness—in the coo of the wood-pigeon as in any sound in nature, and yet, if one listens a little, one will find a good deal of variety in it. Every individual bird has its own intonation, and whilst, in the greatest number, this "speaks of all loves" as it should do, in some few a coo seems almost turned into a scream. Sometimes, too, I have remarked a peculiar vibration in the cooing of one of these birds, due, I think, to there being hardly any pause between the several notes, which are, usually, well separated. Such a difference does this make in the character of the sound, that, at first, one might hardly recognise it as belonging to the same species. Even in the

"AT THE QUIET EVENFALL"

Wood-Pigeons coming in to Roost

p. 8.

UNIV. OF
CALIFORNIA

typical note, as uttered by any individual bird, there is not so much sameness as one might think. It is repeated, but not exactly repeated. Three similar, or almost similar, phrases, as one may call them, are made to vary considerably by the different emphasis and expression with which they are spoken. In the first of these the bird says, "Roo, coo, oo-oo, oo-oo," with but moderate insistence, as though stating an undeniable fact. Then quickly, but still with a sufficiently well-marked pause, comes the second, "Rōō, cōō, oo-ōō, oo-ōō," with very much increased energy, as though warmly maintaining a proposition that had been casually laid down. In the third, "roo, coo," &c., there is a return to the former placidity, but now comes the last word on the subject: "ook?" which differs in intonation from anything that has gone before, there being a little rise in it, an upturning which makes it a distinct and unmistakable interrogative, an "Is it not so?" to all that has gone before.

Considerable numbers of wood-pigeons roost, during winter, in the various fir plantations which now make a feature of the country round Ickleingham. They retire somewhat early, so that it is still the afternoon, rather than the evening, when one hears the first great rushing sound overhead, and a first detachment come sweeping over the tops of the tall, slender firs, and shoot, like arrows, into them. Then come other bands, closely following one another. The birds fly in grandly. Sailing on outspread wings, they give them but an occasional flap, and descend upon the dark tree-tops from a considerable height. The grand rushing sound of their wings,

so fraught with the sense of mystery, so full of hurry and impatience, has a fine inspiriting effect; it sweeps the soul, one may say, filling it with wild elemental emotions. What is this? Is it not a yearning back to something that one once was, a backward-rushing tide down the long, long line of advance? I believe that most of those vague, undefined, yet strongly pleasurable emotions that are apt to puzzle us—such, for instance, as Wordsworth looks upon as "intimations of immortality"—have their origin in the ordinary laws of inheritance. What evidence of such immortality as is here imagined do these supposed intimations of it offer? Do they not bear a considerable resemblance to the feelings which music calls up in us, and which Darwin has rationally explained?[1] "All these facts," says Darwin, "with respect to music and impassioned speech, become intelligible to a certain extent, if we may assume that musical tones and rhythm were used by our half-human ancestors during the season of courtship, when animals of all kinds are excited, not only by love, but by the strong feelings of jealousy, rivalry, and triumph. From the deeply-laid principle of inherited associations, musical tones, in this case, would be likely to call up, vaguely and indefinitely, the strong emotions of a long-past age. Thus, in the Chinese annals it is said, 'Music' (and this is Chinese music, by the way) 'has the power of making heaven descend

[1] The late F. W. H. Myers explains music in his own way—in forced accordance, that is to say, with his subliminal self hypothesis—without even a reference to Darwin! Did he not know Darwin's views, or did he think himself justified in ignoring them?

upon earth' ; and, again, as Herbert Spencer remarks, 'Music arouses dormant sentiments of which we had not conceived the possibility, and do not know the meaning' ; or, as Richter says, 'tells us of things we have not seen and shall not see.'" I have little doubt myself that the feelings to which we owe our famous ode, and those which were aroused by music in the breast of Jean Paul and the Chinese annalist, were all much of the same kind, and due to the same fundamental cause. We may, indeed, say with Wordsworth that the soul "cometh from afar," but what world is more afar than that of long past time, which we may, yet, dimly carry about with us in our own ancestral memories?

There is, I believe, no falser view than that which looks upon the poet as a teacher, if we mean by this that he leads along the path of growing knowledge; that he, for instance, and not Newton, gets first at the law of gravitation, and so forth. If he ever does, it is by a chance combination, merely, and not as a poet that he achieves this; but, as a rule, poets only catch up the ideas of the age and present them grandly and attractively.

"A monstrous eft was, of old, the Lord and Master of Earth," &c.

Yet this very ode of Wordsworth "on intimations of immortality," has been quoted by Sir Oliver Lodge in his Presidential Address to the Society for Psychical Research,[1] as though it were evidential. I cannot understand this. Surely a feeling that a thing is, is not, in itself, evidence that it is—and, if not, how does the beauty and strength of the language

[1] As reported in "Proceedings," March 1902. Part xliii.

which states the conviction, make it such? In this famous poem there is no jot of argument, so that the case, after reading it, stands exactly the same as it did before. No more has been said now, either for or against, than if any plain body had expressed the same ideas in his or her own way. For these mysterious sensations are not confined to poets or great people. They are a common heritage, but attract outside attention only when they find exalted utterance. *Suum cuique* therefore. The poet's aptitude is to feel and express; not, as a rule, to discover.

Besides the grand sweeping rush of the wood-pigeons over the plantation, which makes the air full of sound, there is some fluttering of wings, as the birds get into the trees; but this is less than one might expect. It is afterwards, when they fly—first one and then another—from the tree they have at first settled in to some other one, that they think will suit them better, that the real noise begins. Then all silence and solitude vanishes out of the lonely plantation, and it becomes full of bustle, liveliness, and commotion. The speed and impetus of the first downward flight has carried the birds smoothly on to the branches, but now, flying under them, amongst the tree trunks, they move heavily, make a great clattering of wings in getting up to the selected bough, and often give a loud final clap with them, as they perch upon it.

Wood-pigeons are in greater numbers in this part of Suffolk than one might suppose would be the case, in a country for the most part so open. However, even a small plantation will accommodate a great many. I remember one cold afternoon in

December going into one of young oaks and beeches, skirting a grove of gloomy pines, where the rooks come nightly to roost. My entry disturbed a multitude of the birds in question, but after sitting, for some time, silently, under a tree of the dividing row, they returned "in numbers numberless," almost rivalling the rooks themselves. Some trees seemed favourites, and, from these, clouds of them would, sometimes, fly suddenly off, as if they had become overcrowded. There was a constantly recurring clatter and swish of wings, and then all at once the great bulk of the birds, as it seemed to me, rose with such a clapping as Garrick or Mrs. Siddons might have dreamed of, and departed — quantities of them, at least — in impetuous, arrowy flight. I should have said, now, that the greater number were gone, though the plantation still seemed fairly peopled. Towards four, however, it became so cold that I had to move, and *all* the pigeons flew out of all the trees—a revelation as to their real numbers, quite a wonderful thing to see. Some of the trees, as the birds left them, just in the moment when they were going, but still there, were neither oaks nor beeches—nor ashes, elms, poplars, firs, sycamores, or any other known kind for the matter of that—but *pigeon*-trees, that and nothing else.

For wrens, tits, and golden-crested wrens these fir plantations are as paradises all the year round. The first-named little bird may often be seen creeping about amongst the small holes and tunnels at the roots of trees—especially overturned trees—going down into one and coming out at another,

as though it were a mouse. It is very pretty to see it peep and creep and disappear, and then demurely appear again. Often it will be underground for quite a little while—long enough to make one wonder, sometimes, if anything has happened to it—but nothing ever has. As soon as it has explored one labyrinth, it utters its little chirruppy, chirpy, chattery note, and flits, a brown little shadow, to another, into the first dark root-cavern of which it, once more, disappears. House-hunting, it looks like—for the coming spring quarter, to take from Lady Day, it being February now—but it is too early for the bird to be really thinking of a nest, and no doubt the finding of insects is its sole object. The golden-crested wrens are more aerial in their search for food. They pass from fir-top to fir-top, flitting swiftly about amongst the tufts of needles, owing to which, and their small size, it is difficult to follow their movements accurately. The pine-needles seem very attractive to them. I have often searched these for insects, but never with much success, and I think, myself, that they feed principally upon the tiny buds which begin to appear upon them, very early in the year. In winter they may often be seen about the trunks of the trees, and I remember, once, jotting down a query as to what they could get there on a cold frosty morning in December, when a spider, falling on the note-book, answered it in a quite satisfactory manner.

Many spiders hibernate under the rough outer bark of the Scotch fir, often in a sort of webby cocoon, which they spin for themselves; numbers of small

pupæ, too, choose—or have chosen in their pre-existences—the same situations, especially that of the cinnabar moth, which is extremely common about here. Its luridly-coloured caterpillar—banded with deep black and orange—swarms upon the common flea-bane, which grows something like a scanty crop over much of the sandy soil; and when about to pupate, as I have noticed with interest, it ascends the trunk of the Scotch fir, and undergoes the change in one of the numerous chinks in its flaky bark. I have seen numbers of these caterpillars thus ascending and concealing themselves, but I do not know from how great a distance they come to the trees. Probably it is only from quite near, for the majority, to get to them, would have to travel farther than can be supposed possible, and, moreover, fir-trees in these parts date, as I said, only from some fifty years back. Doubtless it is mere accident, but when one sees such numbers crawling towards the trees, and ascending as soon as they reach them, it looks as though they were acting under some special impulse, such as that which urges birds to migrate, or sends the lemmings to perish in the sea. These caterpillars, however, as I now bethink me, are nauseous to birds. I have thrown them to fowls who appeared not to see them, so that they offer, I suppose, an example of warning coloration. If, however, the caterpillar is unpalatable, the chrysalis probably is also, so that it would not be for these that the golden wren, or the coal-tit, its frequent companion, searches the bark in the winter.

Coal-tits, too, feed much—*ne m'en parlez point*—on the delicate little buds at the ends of the clusters

of spruce-needles, but they, likewise, pull at and examine the needles themselves, so may, perhaps, find some minute insects at their bases. They eat the buds of the larch, too, and, as said before, whatever they can get by prying and probing about, on the trunks of all these firs—especially that of the Scotch one, which they search, sometimes, very industriously. Whilst thus engaged they say at intervals, "Woo-tee, woo-tee, woo-tee" (or "Wee-tee," a sound between the two), and sometimes "Tooey, tooey, tooey-too; tooey, tooey, tooey-too." They flit quickly from place to place, and, both in this and their way of feeding generally, a good deal resemble the little golden wrens. The latter, however, are brisker, more fairy-like, and still more difficult to watch. Yet, do not let me wrong the coal-tit—he moves most daintily. Every little hop is a little flutter with the wings, a little flirt with the tail. His little legs you hardly see. He has a little game—not hop, skip, and jump, but hop, flirt, and flutter. His motion combines all three—in what proportions, how or when varying, that no man knoweth. How, exactly, he gets to any place that he would, you do not see, you cannot tell—he is there, that you see, but the rest is doubtful. He does not know, himself, I believe. "*Aber frag' mich nür nicht wie*," he might say, with Heine, if you asked him about it.

But if there is such a mystery in the movements of the coal-tit, what is to be said about those of the long-tailed one? Most unfair would it be to omit him, now that the other has been mentioned. Nor will I. Dear little birdikins! The naturalist must

be *blasé*, indeed, who could ever be tired of noting your ways, though he might well be weary of following you about amongst the delicate larches, which are most your fairy home and in which you look most fairy-like. Such a dance as you lead him! For always you are passing on, making a hasting, running examination of the twigs of the trees you flit through, searching systematically, from one to another, in a sort of aerial forced-march, which makes you—oh, birdikins!—most difficult to watch. Like other tits, you—Oh, but hang the apostrophe; I can't sustain it, so must drop, again—and I think for ever—into the sober third person. Like other tits, then, these little long-tailed ones are fond of hanging, head downwards, on the under side of a bough or twig: but I am not sure if I have seen other tits come down on a bough or twig in this way—at any rate not to the same extent. Say that a blue or a great tit, and a long-tailed one, are both on the same bough, together. The two former will fly, or flutter-fly, to another, alight upon its upper side, and get round to its under one, by a process that can be seen. The long-tailed tit will jump and arrive on the under side, hanging there head downwards. That, at least, is what it looks like, as if he had turned himself on his back, in the air, before seizing hold of his twig. Really there is a little swing down, after seizing it—like an acrobat on a trapeze—but this is so quick that it eludes the eye. It is by his legerdemain and illusion, and by his jumping, rather than flying, from bough to bough, that the long-tailed tit is distinguished. He often makes a good long jump

—a real jump—without appearing to aid himself with his wings at all. The note of these tits is a "Zee, zee—zee, zee, zee, zee," but it is not of such a sharp quality as the "zee" or "tzee" of the blue tit. It is more pleasing—indeed, there is something very pleasing about it. What is there, in fact, that is not pleasing about this little bird?

But I have something more to say upon the subject of the coal-tit's diet; for he eats, I believe, the seeds of the fir-cones, and manages not only to pick them out of these, but to pick the cone itself to pieces in so doing—a wonderful feat, surely, when one thinks how large and hard the cone is, and how small the bird. It is not on the tree that I have seen these tits feeding in this manner, but on the ground, and the question, for me, is whether the cones that lay everywhere about had been detached and then reduced, sometimes, almost to shreds, by them or by squirrels. At first I unhesitatingly put it down to the latter, but I soon noticed that in these particular firs—not part of a plantation but skirting the road, as is common here—a squirrel was never to be seen. Neither were coal-tits numerous, but still a pair or two seemed to live here, and were often engaged with the cones. Half-a-dozen of these I took home to examine at leisure. Two, I found, had been only just commenced on, and the punctures upon them were certainly such as might have been made by the beak of a small bird, suggesting that the tit had here begun the process of picking the cone to pieces, before any squirrel had touched it. One of the outer four-sided scales had been removed, and as no cut or excoriation was

visible upon the surface thus exposed, this, again, looked more as if the scale aforesaid had been seized with a pincers—the bird's beak—and torn off, than as though it had been cut away with a chisel—the squirrel's teeth—for, in this latter case, the plate beneath would, in all probability, have been cut into, too, at some point, and not left in its natural smooth state. Another two of these cones consisted of the bases only, and from their appearance and the débris around them, seemed to have been pecked and torn, rather than gnawed to pieces. In five out of the six, the extreme base—that part from the centre of which the stalk springs—had been left untouched. In the sixth, however, this had been attacked, and presented a rough, hacked, punctured appearance, the stalk itself—represented by just a point—having apparently been pecked through, suggesting strongly that the tits had commenced work while the cone hung on the tree, and had severed it in this way. All round the basal circle the scales had been stripped off, and the exposed surface was smooth and unexcoriated—as in the other instance—except where a portion of it seemed to have been torn, not cut, away. Two seed-cavities were exposed and empty. It certainly looked as though these cones had been hacked and pulled to pieces by the tits, and not gnawed by squirrels, so as this agreed with the absence of the latter, and what I had actually seen the bird doing, I came to the conclusion that they had been. Perhaps there is nothing very wonderful in it after all, but, looking at a fir-cone, I should have thought it clean beyond the strength of a coal-tit to tear it to pieces. But what, now, is

the origin of the name "coal-tit," which seems to have no particular meaning? Is it a corruption of "cone-tit," which, if the bird really feeds on the seeds of the fir, and procures them in this manner, would have one? German *Kohlmeise*, however, is rather against this hypothesis.

YOUNG NIGHTJARS

CHAPTER II

ONE bird there is to whom these scattered fir plantations, with their surrounding, sandy territory, dotted here and there with a gaunt elder-bush or gnarled old hawthorn, are extremely dear, and that bird is the nightjar. Nightjars are very common here. If spruces and larches alternate with the prevailing Scotch fir, they love to sit on the extreme tip-top of one of these, and there, sometimes, they will "churr" without intermission for an extraordinary length of time. Sometimes it seems as if the bird would never either move, or leave off, but all at once, with a suddenness which surprises one, it rises into the air, and goes off with several loud claps of the wings above the back, and uttering another note—"quaw-ee, quaw-ee"—which is never heard, save during flight. After a few circles it may be

joined by a companion—probably its mate—upon which, as in an excess of glad excitement, it will clap its wings, again, a dozen or score of times in succession. The two then pursue one another, wheeling in swiftest circles and making, often, the most astonishing turns and twists, as they strive either to escape or overtake. Often they will be joined by a third or fourth bird, and more fast, more furious, then, becomes the airy play. No words can give an idea of the extreme beauty of the flight of these birds. In their soft moods they seem to swoon on the air, and, again, they flout, coquette, and play all manner of tricks with it. Grace and jerkiness are qualities quite opposite to each other. The nightjar, when "i' the vein," combines them with easy mastery, and to see this is almost to have a new sensation. It is as though Shakespeare's Ariel were to dance in a pantomime,[1] yet still be Shakespeare's Ariel. As one watches such beings in the deepening gloom, they seem not to be real, but parts of the night's pageant only—dusky imaginings, shadows in the shapes of birds. What glorious powers of motion! One cannot see them without wishing to be one of them.

I have spoken of the nightjar clapping its wings a dozen or score of times in succession. This is not exaggerated. I have counted up to twenty-five claps myself, and this was less than the real number, as the first tumultuous burst of them was well-nigh over before I began to count. It is not easy, indeed, to keep up with the bird, and when it stops, one is,

[1] Or in The Tempest as produced and acted at Stratford-on-Avon during the last anniversary.

generally, a little behind. The claps are wonderfully loud and distinct—musical they always sound to me—and I believe, myself, that they are almost as sexual in their character as is the bleating of the snipe. The habit has, indeed, become now so thoroughly ingrained that any sudden emotion, as, say, surprise or fear, is apt to call it forth, of which principle, in nature, many illustrations might be given; but it is when two or more birds are sporting together—or when one, after a long bout of "churring," springs from the tree, and, especially, in a swift, downward flight to the ground, where its mate is probably reclining—that one hears it in its perfection. Why so little has been said about this very marked and noticeable peculiarity, why a work of high authority should only tell us that "in general its flight is silent, but at times, when disturbed from its repose, its wings may be heard to smite together," I really do not know. The expression used suggests that the sound made by the smiting of the wings is but slight, whereas one would have to be fairly deaf not to hear it. And why only "when disturbed"? Under such circumstances the performance will always be a poor one, but it is not by startling the bird, but by waiting, unseen and silent, that one is likely to hear it in its perfection, and then not alarm or disquietude, but joy will have produced it—it is a glad ebullition.

The domestic habits of the nightjar are very pretty and interesting. No bird can be more exemplary in its conjugal relations, and in its care and charge of the young. Both husband and wife

take part in the incubation of the eggs, and there is, perhaps, no prettier sight than to see the one relieve the other upon them. It is the female bird, as I believe, that sits during the day—which, to her, is as the night—and, shortly after the first churring round about begins to be heard, her partner may be seen flying up from some neighbouring clump of trees, and, as he comes, uttering, at intervals, that curious note of "quaw-ee, quaw-ee," which seems to be the chief aerial vehicle of the domestic emotions. As it comes nearer, it is evidently recognised by the sitting bird, who churrs in response, but so softly that human ears can only just catch the sound. The male now settles beside her, churrs softly himself, and then pressing and, as it were, snoozling against her, seems to insist that it is now his turn. For a few seconds the pair sit thus, churring together, and, whilst doing so, both wag their tails—and not only their tails, but their whole bodies also—from side to side, like a dog in a transport of pleasure. Then all at once, without any fondling or touching with the beak—which, indeed, I have never seen in them—the female darts away, leaving the male upon the eggs. She goes off instantaneously, launching, light as a feather, direct from her sitting attitude, without rising, or even moving, first. In other cases the cock bird settles himself a little farther away, and the hen at once flies off. There are infinite variations in the pretty scene, but the prettiest, because the most affectionate, is that which I have described, where the male, softly and imperceptibly, seems to squeeze himself on to the eggs, and his partner off them.

I have seen tame doves of mine act in just the same way, and here, too, both would coo together upon the nest.

In regard to the two sexes churring, thus, in unison, I can assert, in the most uncompromising manner, that they do so, having been several times a witness of it, at but a few steps' distance, and in broad daylight, I may almost say, taking the time of the year into consideration. The eyes, indeed, are as important as the ears in coming to a conclusion on the matter, for not only is the tail wagged in these little duets, but with the first breath of the sound, the feathers of the bird's throat begin to twitch and vibrate, in a very noticeable manner. Various authorities, it is true, either state or imply that the male nightjar alone churrs, or burrs, or plays the castanets, however one may try to describe that wonderful sound, which seems to become the air itself, on summer evenings, anywhere where nightjars are numerous. But these authorities are all mistaken, and as soon as they take to watching a pair of the birds hatching their eggs, they will find that they were, but not before, for there is no other way of making certain. It is true that the churr thus uttered, though as distinct as an air played on the piano, is now extraordinarily subdued, of so soft and low a quality that, remembering what it more commonly is, one feels inclined to marvel at such a power of modulation. But it is just the same sound "in little"—how, indeed, can such a sound be mistaken?—and, after all, since a drum can be beaten lightly, there is no reason why an instrument, which is part of the performer itself,

should be less under control. What is really interesting and curious is to hear such a note expressing, even to one's human ears, the soft language of affection—for it does do so in the most unmistakable manner.

Though, as we have seen, both the male and female nightjar help in the hatching of the eggs, the female takes the greater part of it upon herself, and is also much more *au fait* in the business—I believe so, at least. The sexes are, indeed, hard to distinguish, and, as the light fades, it becomes, of course, impossible to do so. Still, one cannot watch a sitting pair, evening after evening, for an hour or more at a time, without forming an opinion on such a point; and this is mine. We may assume, perhaps, that it is the female bird who sits all day, without once being relieved. If so, it is the male who flies up in the evening, and from this point one can judge by reckoning up the changes, and timing each bird on the eggs. This I did, and it appeared to me, not only that the hen was, from the first, the most assiduous of the two, but, also, that the cock became less and less inclined to attend to the eggs, as the time of their hatching drew near. So, too, he seemed to me to sit upon them with less ease and to have a tendency to get them separated from each other, which, in one case, led to a scene which, to me, seemed very interesting, as bearing on the bird's intelligence, and which I will therefore describe. I must say that, previously to this, when both birds were away, I had left my shelter in order to pluck an intervening nettle or two, and thus get a still clearer view, and I had

then noticed that the two eggs lay rather wide apart. Shortly afterwards one of the birds, which I judged to be the male, returned, and in getting on to the eggs—which it did by pushing itself along the ground—it must, I think, have moved them still farther from one another. At any rate it became necessary, in the bird's opinion, to alter their relative position, and in order to do this it went into a very peculiar attitude. It, as it were, stood upon its breast, with its tail raised, almost perpendicularly, into the air, so that it looked something like a peg-top set, peg upwards, on the broad end, the legs being, at no time, visible. Thus poised, it pressed with the under part of its broad beak—or, as one may say, with its chin—first one egg and then the other against its breast, and, so holding it, moved backwards and forwards over the ground, presenting a strange and most unbirdlike appearance. The ground, however, was not even, and despite the bird's efforts to get the two eggs together, one of them—as I plainly saw—rolled down a little declivity. At the bottom some large pieces of fir-bark lay partially buried in the sand, and under one of these the egg became wedged. The bird was unable to get it out, so as to bring it up the hill again to where the other egg lay, for the bark, by presenting an edge, prevented it from getting its chin against the farther side of the one that was fast, so as to press it against its breast as before—though making the most desperate efforts to do so. Wedging its head between the bark and the ground, it now stood still more perpendicularly upright on its breast, and, in this

position, shoved and shouldered away, most desperately. After each effort it would lie a little, as if exhausted, then waddle to the other egg, and settle itself upon it; then, in a minute or two, return to the one it had left, and repeat its efforts to extricate it. At last, however, after nearly half-an-hour's labour, an idea seemed to occur to it. It went again to the properly-placed egg, but instead of settling down upon it, as before, began to move it to the other one, in the way that I have described. "If the mountain will not go to Mahomet, Mahomet must go to the mountain"—that was clearly the process of reasoning, and seeing how set the bird's mind had been on one course of action—how it had toiled and struggled and returned to its efforts, again and again—its subsequent, sudden adoption of another plan showed, I think, both intelligence and versatility. It, in fact, acted just as a sensible man would have done. It tried to do the best thing, till convinced it was impossible, and then did the second best. Having thus got the two eggs together again, it tried hard to push away the piece of bark—which was half buried in the sand—backwards, with its wings, feet, and tail, after the manner in which the young cuckoo—in spite of the anti-vaccinationists[1]—ejects its foster brothers and sisters from the nest. Finally, as it grew dark, it flew away. I then went out to look, and found that the bird had been successful in its efforts, to a certain extent. The two eggs now lay together,

[1] The accuracy of Jenner's observations on this point, was questioned, not long since, by his enemies: but most triumphantly was it vindicated.

and though not quite on the same level, and though the piece of bark was still in the way of one of them, both might yet have been covered, though not with ease, and so, possibly, hatched out. However, had I left them as they were, I have no doubt that, assisted, perhaps, by its partner, the bird would have continued to work away till matters were quite satisfactory. But having seen so much, and since it would soon have been too dark to see anything more, I thought I would interfere, for once, and so removed the bark, and smoothing down the declivity, laid the eggs side by side, on a flat surface. I must add that whilst this nightjar was thus struggling to extricate its eggs, it uttered from time to time a low querulous note.

When the eggs are hatched, both parents assist in feeding the chicks, and the first thing that one notices—and to me, at least, it was an interesting discovery—is that they feed them, not by bringing them moths or cockchafers—on which insects the nightjar is supposed principally to feed—in their bill, but by a process of regurgitation, after the manner of pigeons. There is one difference, however, viz., that whereas the bill of the young pigeon is placed within that of the parent, the young nightjar seizes the parent's bill in its own. Those peculiar jerking and straining motions, which are employed to bring up the food—from the crop, as I suppose—into the mouth, are the same, or, at least, closely similar, in either case. I have watched the thing taking place so often, and from so near, that I cannot, I think, have been mistaken. There was, usually, a good light, when the first ministrations

began, and even after it had grown dark I could almost always see the outline of the bird's head and beak, defined against the sky, as it sat perched upon the bare, thin point of an elder-stump, from which it generally flew to feed the chicks. Never was this outline broken by any projection, as it must have been had an insect of any size been held in the bill. A more conclusive argument is, I think, that the chicks were generally fed, in the way I have described, several times in succession. They would always come out from under their mother, as the evening approached, and, jumping up at her bill, try to insist on her feeding them. Whether she ever fed them, then, before leaving the nest, I cannot, for certain, say. I do not think she did, nor can I see how she could have had anything in her crop after sitting, fasting, all day. As a rule, at any rate, she first flew off, and fed them only on her return. When she flew, I used to watch her for as long as I could, and would sometimes see her, as well as the other one, circling and twisting about in the air, in pursuit of insects, as it appeared to me. I never saw any insects, however, as I should have done had they been of any size, nor did I ever see anything, on the part of the birds, that looked like a snatch in the air with open bill. But if insects were being caught at all, the bill must, of course, have been opened to some extent, and this shows, I think—for what else could the birds have been doing?—that it is very difficult in the dusk of evening to see it opened, even when it is. For my own part, I have found it difficult—not to say impossible—to see swallows

open their beaks, even in broad daylight, when they were obviously hawking for insects. The point is an important one, I think, in considering what kinds of insects the nightjar more habitually feeds on, and how, in general, it procures them—questions which, having been settled, as it seems to me, merely by assertion, are entirely reopened by the fact that the young are fed in the way I have described. For if moths and cockchafers are the bird's principal food, why should it not bring these to the young, in the ordinary way? But if it swallows huge quantities of insects, so small that it cannot seize them in the bill, but must engulf them, merely, as it flies, as a whale does infusoria, we can then see a reason for its not doing so. How else, but by disgorging it in the form of a pulp, could such food as this be given to the chick? and if to do so became the bird's habitual practice, it would not be likely to vary it in any instance. Now the green woodpecker feeds largely on ants, and, further on, I will give my reasons for believing that it feeds its young by regurgitation. The little woodpecker, however, I have watched coming, time and time again, to its hole in the tree-trunk, with its bill full of insects of various kinds, and of a respectable size, so that there is no doubt that it gives these to its brood, as does a thrush or a blackbird. What can make a difference, in this respect, between two such closely-allied species, if it be not that the one has taken to eating ants, minute creatures which it has to swallow wholesale, and could not well carry in the bill? When, therefore, we find the parent nightjar regurgitating food into the

chick's mouth, we may suspect that it also swallows large quantities of insects of an equally small, or smaller size. The beak need neither be widely nor continuously opened, for many such to be engulfed as the bird sailed through a strata of them; but even if it were both, we need not wonder at its not often being remarked, in a species which flies and feeds, mostly, by night, when it is both dark, and people are in bed. Still, I find in Seebohm's "History of British Birds" the following: "The bird has been said to hunt for its food, with its large mouth wide open, but this is certainly an error." The first part of the sentence impresses me more than the last. Why *has* the bird its tremendous, bristle-fringed gape? Does it not suggest a whale's mouth, with the baleen? Other birds catch individual insects as cleverly, without it.

There is another consideration which makes me think that nightjars feed much in this way. They hardly begin to fly about, before 8.30 in the evening, and between 3 and 4, next morning, they have retired for the day. Now I have watched them closely, on many successive evenings in June and July, and, for the life of me, I could never make out what food they were getting, or, indeed, that they were getting any, up to at least 10 o'clock. For much of the time they would be sitting on a bough, or perched on a fir-top, and churring, and, when they flew, it was often straight to the ground, and then back, again, to the same tree. They certainly did not seem to be catching insects when they did this, and their longer flights were not, as a rule, round trees, and

often resolved themselves into chasing and sporting with one another. That they occasionally caught moths or cockchafers seems, in itself, likely, but I never had reason to suppose that these were their particular quarry. It seems strange that I should have so rarely seen them catch any large insect—I cannot, indeed, remember an instance; but, on the other hand, they might well have engulfed crowds of small ones, as they flew, without my being able to detect it, and without any special effort to do so. That the air is often full of these—gnats, little flies, &c.—may be conjectured by watching swallows, and also bats. Indeed, one may both see and feel them oneself—in cycling, for instance, when I have often had a small beetle, constructed on the general plan of a devil's coach-horse, sticking all over me. For all the above reasons, my view is that it is the smaller things of the air which form the staple of the nightjar's food, and that its huge gape, and, possibly, the bristles on either side of the upper jaw, stand in relation to the enormous numbers of these which it engulfs. The bird, in fact—and this would apply equally to the other members of the family—plays, in my idea, the part of an aerial whale.

I have watched a pair of nightjars through the whole process of hatching out their eggs and bringing up their young, as long as the latter were to be found; for they got away from the nest—if the bare ground may be called one—long before they could fly. It was on the last day of June that the chicks first burst upon me. I had been watching the sitting bird for some time, and had noticed that the

feathers just under her chin were quivering, while her beak was held slightly—as slightly as possible—open. I thought she must be churring, but no sound reached my ear, so I concluded she was asleep merely, and dreaming that she was. She sat so still and close that I never imagined she could have ceased incubating. I had seen her eggs, too, as I thought, yesterday; but in this I may have been mistaken. All at once, however, a strange little, flat, fluffy thing ran out from under her breast, and, stretching up, touched its mother's beak with its own. She did not respond, however, on which the chick ran back, disappointed. As soon as that queer little figure had disappeared, I was all eagerness to see it again, but hour after hour went by, the old bird drowsed and dreamed, and still there was no re-emergence. It seemed as though I had had an hallucination of the senses, all looked so still and unchangeable; but, at last, as the evening began to fall, and churring to be heard round about, out, suddenly, came the little apparition again, accompanied, this time, with an exact duplicate of itself. The two appeared from opposite sides, and, with a simultaneous jump, seized and struggled for the beak of the mother, who again resisted, and then, suddenly, darted off, just as, with "quaw-ee, quaw-ee," the partner bird flew up. He settled himself beside the chicks, and when they sprang up at him, as they had just before done at the mother, he fed one thoroughly, but not the other, flying off immediately afterwards. The hen soon returned, and fed both the chicks several times, always, as I say, by the regurgitatory process. Between the

intervals of feeding them, she kept uttering a little croodling note, expressive of quiet content and affection, whilst the chicks, more rarely, gave vent to a slender pipe. One of them I now[1] saw to be a little larger than the other, and of a lighter colour, and this bird seemed always to be the more greedy. The difference, in all three respects, increased from day to day, till at last, in regard to size, it became quite remarkable. The two parent birds were much alike in this respect, and as the two chicks had been born within a day of each other, it seems odd that there should have been this disparity between them. But so it was.

It appeared to me that, as the big chick was certainly the greedier of the two, so both the parents tried to avoid the undue favouring of it at the expense of the other. If so, however, their efforts were not very effective. It was difficult, indeed, to avoid the eagerness of whichever one first jumped up at them. As they got older, the chicks were left more and more alone in the nest, or, rather, on the spot where they were born. At first, they used to lie there in a wonderfully quiescent way, not moving, sometimes, for hours at a time, but gradually they became more active, and would make little excursions, from which they did not always trouble to return. Thus, by degrees, the old nesting-site became lost, for the parents, though for some time they continued to show an affection for it, settled more and more by the chicks, or, if they did not see them, somewhere near about, and then called them up to them. This they did with the little

[1] Or some days later.

croodling note which I have spoken of, and which the chicks, on hearing, would answer with a "quirr, quirr," and run towards it, then stop to listen, and run again, getting, all the while, more and more excited. If the old bird was at any distance, which, as the chicks got older, was more and more frequently the case, there would sometimes be long intervals between these summoning notes—if we assume them to be such—and, during these, the chicks lay still and, generally, close together, as if they were in the nest. When I walked to them, on these occasions, both the parent birds would start up from somewhere in the neighbourhood, and whilst one of them flew excitedly about, the other—which I took to be the hen—used always to spin, in the most extraordinary manner, over the ground, looking more like an insect than a bird, or, at any rate, suggesting, by her movements, those of a bluebottle that has got its wings scorched in the gas, and fallen down on the table. Whilst she was doing this, the chicks would, sometimes, run away, but, quite as often, one or both of them would remain where they were—apparently quite unconcerned—and allow me to take them up. When, at last, the mother followed the example of her mate, and flew off, she showed the same superior degree of anxiety in the air, as she had, before, upon the ground. She would come quite near me, hover about, dart away and then back again, sit on a thistle-tuft, leave it, as though in despair, and, at last, re-alight on the ground, where she kept up a loud, distressed kind of clucking, which, at times, became shriller, rising, as it were, to an agony. The

male was a little less moved. Still, he would fly quite near, and often clap his wings above his back. I cannot, now, quite remember whether the male ever began by spinning over the ground, in the same way as the hen, but, if he did, it did not last long, and he soon took to flight.

It will be seen from the above that the chicks are very well able to get about. They run, indeed, as easily, if not quite so fast, as a young duckling, and this power is retained by the grown bird, in spite of its aerial habits, for I have seen my two pursuing one another over the ground with perfect ease and some speed, seeming, thus, to run without legs, for these were at no time visible. The ground-breeding habits of the nightjar probably point to a time when it was, much more, a ground-dwelling bird, and as these habits have continued, we can understand a fair power of locomotion having been retained also. My own idea is that the nuptial rite is, sometimes at least, performed on the ground, but of this I have had no more than an indication.[1]

The nightjar utters many notes, besides that very extraordinary one by which it is so well known, and which has procured for it many of its names. I have made out at least nineteen others; but I do not believe that any very special significance belongs to the greater number of them, and I hold the same view in regard to many other notes uttered by various birds, which are supposed, always, to have some well-defined, limited meaning. Each, no doubt, has a meaning, at the time it is uttered,

[1] The pursuit, namely, just alluded to; but the birds were soon lost amongst the nettles.

but I think it is, generally, one of many possible ones which may all be expressed by the same note, such note being the outcome, not of a definite idea, but of a certain state of feeling. Surprise, for instance, may be either a glad surprise or a fearful surprise, and very varied acts spring from either joy or fear. With ourselves definite ideas have become greatly developed; but animals may live, rather, in a world of emotions, which would then be much more a cause of their actions, and, consequently, of the cries which accompanied them, than the various ideas appertaining to each. Because, for instance, a rabbit stamps with its hind feet when alarmed, and other rabbits profit by its doing so, why need this be done as a signal, which would involve a conscious design? Is it not more likely that the stamp is merely the reaction to some sudden, strong emotion, which need not always be that of fear? If rabbits stamp, sometimes, in sport and frolic—as I think they do—this cannot be a signal, and therefore we ought not to assume that it is, when it has the appearance, or produces the effect, of one. All we can say, as it seems to me, is that excitement produces a certain muscular movement, which, according to the class of excitement to which it belongs, may mean or express either one thing or another. Such a movement, or such a cry, is like the bang of a gun, which may have been fired either as a salute or with deadly intent. However, if the nightjar's nineteen notes really express nineteen definite ideas in the bird's mind, I can only confess that I have not discovered what these are. Some of the sounds,

indeed, are very good illustrations of the view here brought forward—for instance, the croodling one just mentioned, which, when it calls the chicks from a distance, seems as though it could have no other meaning than this, but which may also be heard when parent and young are sitting together, and, again, between the intervals in the process of feeding the latter. Is it not, therefore, a sound belonging to the soft, parental emotions, from which sometimes one class of actions, and sometimes another, may spring—the note being the same in all? From the number of sounds which the nightjar has at command, I deduce that it is a bird of considerable range and variety of feeling, which would be likely to make it an intelligent bird also; and this, in my experience, it is. Two of the most interesting notes, or rather series of notes, which it utters, are modifications, or extensions, of the only one which has received much attention—the churr, namely. One of these is a sort of jubilee of gurgling sounds, impossible to describe, at the end of it; and the other—much rarer—a beatification, so to speak, of the churr itself, also towards the end, the sound becoming more vocal and expressive, and losing the hard, woodeny, insect-like character which it usually has. To these I will not add a mere list of sounds, as to the import of which—not wishing to say more than I know—I have nothing very particular to say.

These are days in which the theory of protective coloration has been run—especially, in my opinion, in the case of the higher animals—almost to death. It may not be amiss, therefore, that I should

mention the extraordinary resemblance which the nightjar bears to a piece of fir-bark, when it happens to be sitting amidst pieces of fir-bark, and not amidst other things, which, when it is, it no doubt resembles as strongly. If, at a short distance, and for a considerable time, one steadily mistakes one thing for another thing, with the appearance of which one is well acquainted, this, I suppose, is fair proof of a likeness, provided one's sight is good. Such a mistake I have made several times, and especially upon one occasion. It was midday in June, and a sunny day as well. I had left the bird in question, for a little while, to watch another, and when I returned, it was sitting in the same place, which I knew like my study table. My eye rested full upon it, as it sat, but not catching the outline of the tip of the wings and tail, across a certain dry stalk, as I was accustomed to do, I thought I was looking at a piece of fir-bark—one of those amongst which it sat. I, in fact, looked for the eggs *upon* the bird, for I knew the exact spot where they should be; but, as I should have seen them, at once, owing to their light colour, I felt sure they must be covered, and after gazing steadily, for some time, all at once—by an optical delusion, as it seemed, rather than by the passing away of one—the piece of fir-bark became the nightjar. It was like a conjuring trick. The broad, flat head, from which the short beak projects hardly noticeably, presented no special outline for the eye to seize on, but was all in one line with the body. It looked just like the blunt, rounded end, either of a stump, or of any of the pieces of fir-bark that were lying about, whilst the dark

brown lines and mottlings of the plumage, besides that they blended with, and faded into, the surroundings, had, both in pattern and colouring, a great resemblance to the latter object; the lighter feathers exactly mimicking those patches which are made by the flaking off of some of the numerous layers of which the bark of the Scotch fir is composed. This would only be of any special advantage to the bird when, as in the present instance, it had laid its eggs amongst pieces of such bark, fallen from the neighbouring Scotch fir-trees, and did it invariably do so, a special protective resemblance might, perhaps, be admitted. This, however, is not the case. It lays them, also, under beeches or elsewhere, where neither firs nor fir-bark are to be seen.

Unless, therefore, it can be shown that a large majority of nightjars lay, and have for a long time laid, their eggs in the neighbourhood of the Scotch fir, the theory of a special resemblance in relation to such a habit, due to the action of natural selection, must be given up; as I believe it ought to be in some other apparent instances of it, which have received more attention. Of course, there might be a difference of opinion, especially if the bird were laid on a table, as to the amount, or even the existence, of the resemblance which I here insist upon. But I return to the essential fact. At the distance of two paces I looked full at a nightjar sitting amongst flakes of fir-bark, strewed about the sand, and, for some time, it appeared to me that it was one of these. This is interesting, if we suppose, as I do, that mere chance has brought about the resemblance, for here is a point from

which natural selection might easily go on towards perfection. As I did make out the bird, at last, there is clearly more to be done. It is, perhaps, just possible that we already see in the nightjar some steps towards a special resemblance. The bird is especially numerous in Norway, as I was told when I was there; and Norway is one great, pine forest. However, not knowing enough in regard to its habitat, and the relative numbers of individuals that resort to different portions of it, to form an opinion on this point, I will suppose, in the meantime, that its colouring has been made generally protective, in relation to its incubatory habits; for the eggs are laid on the ground, and commonly at the foot of a tree, stump, or bush—in the neighbourhood of such objects, in fact, as have a more or less brownish hue.

It is during incubation that the bird would stand most in need of protection, since it is then exposed, more or less completely, for a great length of time. One bird, as far as I have been able to see, sits on the eggs all day long, without ever once leaving them. Day, however, is night to the nightjar, who not only sits on its eggs, but sleeps, or, at least, dozes, on them as well. Drowsiness may, in this case, have meant security both to bird and eggs; for the most sleepy individuals would, by keeping still, have best safeguarded their young, at all stages, as well as themselves, against the attacks of small predatory animals. Flies used often to crawl over the face of the bird I watched daily. They would get on its eyes; and once a large bluebottle flew

right at one of them. But beyond causing it just to open or shut the eye, as the case might be, they produced no effect upon the sleepy creature. The nightjar is a remarkably close sitter, and both this special habit and its general drowsiness upon the nest may have been fostered, at the same time, by natural selection. The more usual view of the nightjar's colouring is, I suppose, that it is dusky, in harmony with night. But from what does a bird of its great powers of flight require protection, either as against the attacks of enemies or the escape of prey; and again, what colour, short of white, would be a disadvantage to it, in the case of either, when *nox atra colorem abstulit rebus?*

Questions of a similar nature may be asked in regard to the tiger, lion, and other large feline animals, which, fearing no enemy, and hunting their prey by scent, after dark, are yet supposed to be protected by their coloration. These things are easily settled in the study, where the habits of the species pronounced upon, not being known, are not taken into account; but I may mention that my brother, with his many years' experience of wild beasts and their ways, and, moreover, a thorough evolutionist, is a great doubter here. How, he asks, as I do now, with him, can the lion be protected, in this way, against the antelope, and the antelope against the lion, when the one hunts, and the other is caught, by scent, after darkness has set in? Of what use, for such a purpose, can colour or colour-markings be to either of them? On the other hand, these go, in varying degrees, to make up a creature's beauty. Take, for instance, the leopard, jaguar, or

tiger.[1] Surely their coloration suggests adornment much more obviously than assimilation; and though they hunt mostly, as I say, by night, they are yet sufficiently diurnal to be able to admire one another in the daytime. Darwin, who is often assumed to have been favourable to the protective theory of coloration in the larger animals, in instances where he was opposed to it, says this: "Although we must admit that many quadrupeds have received their present tints, either as a protection or as an aid in procuring prey, yet, with a host of species, the colours are far too conspicuous, and too singularly arranged, to allow us to suppose that they serve for these purposes." He then cites various antelopes, giving illustrations of two, and continues: "The same conclusion may, perhaps, be extended to the tiger, one of the most beautiful animals in the world, the sexes of which cannot be distinguished by colour, even by the dealers in wild beasts. Mr. Wallace believes that the striped coat of the tiger 'so assimilates with the vertical stems

[1] I can see no reason why those who think the leopard's spots and the tiger's stripes protective, should hold the same theory in regard to the quiet and uniform colouring of the lion. To others, however, this and the obscure markings on the young animal certainly suggest that, here, sexual adornment has given place to harmony with the surrounding landscape. The male lion, however, has developed a mane, and this, by becoming fashionable at the expense of colour and pattern, may have led to the deterioration of the latter. The aboriginal colouring of all these creatures was, probably, dull, and to this the lion may have reverted. But if *he* is protected by his colouring, how can the leopard—in the same country and with similar habits—also be? The same question may be asked in regard to the puma and jaguar, who roam together, seeking the same prey, over a vast expanse of territory. Again, if the lion was once spotted, and if his spots, like the leopard's, were a protection, why has he lost them?

of the bamboo[1] as to assist greatly in concealing him from his approaching prey.' But this view does not appear to me satisfactory." (It seems opposed to the more usual habits of the creature.) "We have some slight evidence that his beauty may be due to sexual selection, for in two species of *felis* the analogous marks and colours are rather brighter in the male than in the female. The zebra is conspicuously striped, and stripes cannot afford any protection on the open plains of South Africa."[2] Yet, when naturalists to-day refer every colour and pattern under the sun to the principle of protection, the reviewers all agree that Darwin agrees with them. Truly, nowadays, "*'Darwin' laudetur et alget.*"

The fact is that for some reason—I believe because it lessens the supposed mental gap between man and other animals—Darwin's theory of sexual selection was, from the beginning, looked askance at; and even those who may accept it, now, in the general, do so tentatively, and with many cautious expressions intended to guard their own reputations. This is not a frame of mind favourable to applying that theory, and, consequently, all the applications and extensions go to the credit of the more accepted, because less *bizarre*, one; for even if authorities are mistaken here, they will, at least, have erred in the orthodox groove, which is something. I believe, myself, that it is sexual selection which has produced

[1] In Indian sporting works one more often reads of tigers being located in "nullahs" or patches of jungle than amongst bamboos. The tiger, moreover, ranges into Siberia, and to the shores of the Caspian, where bamboos, presumably, do not grow, or are not common.

[2] "Descent of Man," pp. 543, 545.

much of what is supposed to be due not only to the principle of protective, but to that, also, of conspicuous, or distinctive, coloration. Take, for instance, the rabbit's tail. I have never been able to make out that the accepted theory in regard to it is borne out by the creature's habits. Rabbits race and run not only in alarm, but as an outcome of high spirits. How can the white tail distinguish between these two causes; and if it cannot, why should it be a sign to follow? One rabbit may indeed judge as to the state of mind of another, but not by looking at the tail; and if too far off to see anything else, it can form no opinion. Again, each rabbit has its own burrow, and it does not follow that because one runs to it here, another should there. Accordingly, I have noticed that white tails in rapid motion produce no effect upon other tails, or their owners, when these are some way off, but that rabbits, alarmed, make their near companions look about them. Of course, in the case of a general stampede, in the dusk, to the warren—from which numbers of the rabbits may have strayed away—it is easy to imagine that the rearmost are following the white tails of those in front of them; or rather that these have given them the alarm, since all know the way to the warren. But how can one tell that this is really so, seeing that the alarm in such a case is generally due to a man stalking up? Would it not look exactly the same in the case of prairie marmots, whose tails are not conspicuously coloured? Young rabbits, it is true, would follow their dams when they ran, in fear, to their burrows; not, however, unless they recognised

them, and this they could not do by the tail alone. If they were near enough to recognise them, they would be able, probably, to follow them by sight alone, tail or no tail, nor would another white powder-puff be liable to lead them astray, as otherwise it might do. With antelopes, indeed, which have to follow one another, so as not to stray from the herd, a light-coloured patch, or wash upon the hinder quarters, might be an advantage; but as some of the kinds that have[1] it are handsomely ornamented on the face and body, and as the wash of colour behind is often, in itself, not inelegant, why should not one and all be for the sake of adornment, or, rather, is it not more likely that they are so? No one, I suppose, who believes in sexual selection at all, will be inclined to explain the origin of the coloured posterior surface in the mandril, and some other monkeys, in any other way. To me, having regard to certain primary facts in the sexual relations of all animals, it does not appear strange that this region should, in many species, have fallen under the influence of the latter power. Can we, indeed, say, taking the Hottentots and some civilised monstrosities of feminine costume that do most sincerely flatter them into consideration, that it has not done so in the case of man?

The protective theory, as applied to animals that hunt, or are hunted, by night, seems plausible only if we suppose that the enemies against whom they are protected, are human ones. But even if man has been long enough upon the scene to produce such modification, who can imagine that he has had

[1] Darwin mentions one conspicuous instance.

anything to do with the colouring of such an animal as, say, the tiger, till recently much more the oppressor than the oppressed, and, even now, as much the one as the other—in India, for instance, or Corea, in which latter country things are certainly equal, if we go by the Chinese proverb, which says, "Half the year the Coreans hunt the tigers, and the other half the tigers hunt the Coreans."

Tigers, indeed—especially those that are cattle-feeders—would seem, often, to kill their prey towards evening, but when it is still broad daylight. With regard, however, to the way in which they accomplish this, I read some years ago, in an Indian sporting work, a most interesting account of a tiger stalking a cow—an account full of suggestiveness, and which ought to have, at once, attracted the attention of naturalists, but which, as far as I know, has never since been referred to. The author—whose name, with that of his work, I cannot recall—says that he saw a cow staring intently at something which was approaching it, and that this something presented so odd an appearance that it was some time before he could make out what it was. At last, however, he saw it to be a tiger, or, rather, the head of one, for the creature's whole body, being pressed to the ground, with the fur flattened down, so as to make it as small as possible, was hidden, or almost hidden, behind the head, which was raised, and projected forward very conspicuously; so that, being held at about the angle at which the human face is, it looked like a large, painted mask, advancing along the ground in a very mysterious manner. At this mask the cow gazed

intently, as if spell-bound, seeming to have no idea of what it was, and it was not till the tiger had got sufficiently near to secure her with ease, that she took to her heels, only to be overtaken and pulled down. Now here we have something worth all the accounts of tiger-shootings that have ever been written, and all the tigers that have ever been shot. So far from the tiger endeavouring to conceal himself *in toto*, it would appear, from this, that he makes his great brindled head, with its glaring eyes, a very conspicuous object, which, as it is the only part of him seen or remarked, looks curious merely, and excites wonder, rather than fear. I know, myself, how much nearer to birds I am able to get, by approaching on my hands and knees, in which attitude "the human form divine" is not at once recognised. Therefore I can see no reason why the same principle of altering the characteristic appearance should not be employed by some beasts of prey, and long before I read this account I had been struck with the great size of the head of some of the tigers in the Zoological Gardens.

The moral of it all, as it appears to me, is that, before coming to any settled conclusion as to the meaning of colour and colour markings in any animal, we should get accurate and minute information in regard to such animal's habits. As this is, really, a most important matter, why should there not be scholarships and professorships in connection with it? It is absurd that the only sort of knowledge in natural history which leads to a recognised position, with letters after the name, is knowledge of bones, muscles, tissues, &c. The habits of

animals are really as scientific as their anatomies, and professors of them, when once made, would be as good as their brothers.

Space, after this disquisition, will not permit me to say much more about the nightjars—only this, that they return each year to the same spot, and have not only their favourite tree, but even their favourite branch in it, to perch upon. I have seen one settle, after successive flights, upon a particular point of dead wood, near the top of a small and inconspicuous oak, surrounded by taller trees which had a much more inviting appearance, and on coming another night, there were just the same flights and settlings. It is not, however, my experience that the eggs are laid, each year, just where they were the year before. It may be so, as a rule, but there are certainly exceptions, and amongst them were the particular pair that I watched.

ROOKS AT NEST

CHAPTER III

THE hooded crow is common in this part of the country, during the winter; to the extent, indeed, of being quite a feature of it. With the country people he is the carrion crow merely, and they do not appear to make any distinction between him and the ordinary bird of that name, which is not seen nearly so often. He is the one they have grown up with, and know best, but his pied colouring does not seem to have gained him any specially distinctive title. For the most part, these crows haunt the open warren-lands, and, owing to their wariness and the absence of cover, are very difficult to get near to. Like the rooks, they spend most of the day in looking for food, and eating it when found, their habit being to beat about in the air, making wider or narrower circles, whilst examining the ground

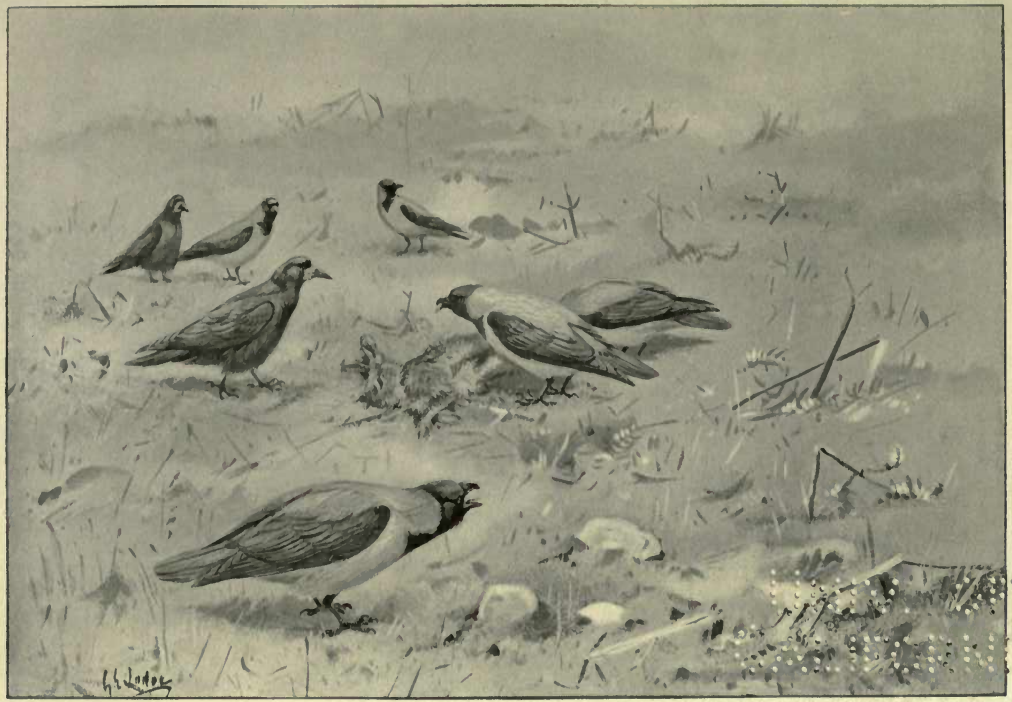
beneath for any offal that may be lying there. This is not so much the habit of rooks, for they, being more general feeders, march over the country, eating whatever they can find. They would be neglecting too much, were they to look for any class of thing in particular, though equally appreciative of offal when it happens to come in their way. "The Lord be praised!" is then their attitude of mind.

The crows, however, feed a good deal in this latter way, too, and, as a consequence, mingle much with the rooks, from whom, perhaps, they have learnt a thing or two. Each bird, in fact, knows and practises something of the other's business, so that, without specially seeking one another's society, they are a good deal thrown together. Were there never any occasion for them to mingle, they would probably not feel the wish to do so, but the slightest inducement will bring crows amongst rooks, and rooks amongst crows, and then, in their actions towards each other, they seem to be but one species. They fight, of course; at least there are frequent disagreements and bickerings between them, but these have always appeared to me to be individual, merely—not to have any specific value, so to speak. Both of them fall out, amongst themselves, as do most other birds. Rooks, especially, are apt to resent one another's success in the finding of food, but such quarrels soon settle themselves, usually by the bird in possession swallowing the morsel; they are seldom prolonged or envenomed. So it is with the rooks and hooded crows, and, on the whole, I think they meet as equals, though there may, perhaps, be a slightly more "coming-on disposition" on

the part of the latter, and a slightly more giving-way one on that of the former bird. One apparent instance of this I have certainly seen. In this case, two rooks who were enjoying a dead rat between them, walked very tamely away from it, when a crow came up; and, later, when they again had the rat, a pair of crows hopping down upon them, side by side, in a very bold and piratical manner, again made them retreat, with hardly a make-believe of resistance. But one of these two crows may have been the bird that had come up before, and the rat may have belonged to it and its mate, by right of first discovery, which, in important finds, there is, I think, a tendency to respect, even if it needs some amount of enforcing. I have observed this when rooks and hooded crows have been gathered together about some offal which they were devouring. One or, at most, two birds seemed always to be in possession, whilst the rest stood around. For any other to insinuate itself into a place at the table was an affair demanding caution, nor could he do so without making himself liable to an attack, serious in proportion to the hunger of the privileged bird. As it began to appear, however, either from the latter's languidness, or by his moving a little away, that this was becoming appeased, another—either rook or crow—would, at first warily, and then more boldly, fall to; and thus, without, probably, any actual idea of the thing, the working out of the situation was, more or less, to take it in turns. At least it was always the few that ate, and the many that waited, and a general sense that this should and must be so seemed to obtain. Always, at such

scenes, there will be many small outbreaks, and when these have been between the two species, I have been unable to make out that one was inferior to the other. But such ebullitions have more of threatening in them than real fighting, so, taking into consideration the incident just recorded, it may be that the crow, when really in earnest, is recognised by the rook as the better bird, though, if anything, I think he is a little the smaller of the two. Jackdaws, on the other hand, seem conscious of their inferiority when with rooks, and slip about demurely amongst them, as though wishing not to be noticed.

On the part of either rook or crow, a combative inclination is indicated by the sudden bending down of the head, and raising and fanning out of the tail. The fan is then closed and lowered, as the head goes up again, and this takes place several times in succession. If a bird come within slighting distance of one that has thus expressed himself, there is, at once, an *affaire*, the two jumping suddenly at one another. After the first pass or two, they pause by mutual consent — just as duellists do in a novel—and then stand front to front, the beaks—or rapiers—being advanced, and pointed a little upwards, their points almost touching. Then, instantaneously, they spring again, each bird trying to get above the other, so as to strike him down. These fireworks, indeed, belong more to the rooks than the crows, for the former, being more social birds, are also more demonstrative. Not that the crows are without the gregarious instinct. Here, at least, in East Anglia, one may see in them



THE RULES OF PRECEDENCE

p. 54. *Hooded Crows and Rooks Feeding*

something like the rude beginnings of the state at which rooks have arrived. They do not flock in any numbers, but bands of six or seven, and upwards, will sometimes fly about together, or sit in the same tree or group of trees. On the ground, too, though they feed in a much more scattered manner than do rooks, not seeming to think of one another, they yet get drawn together by any piece of garbage or carrion that one or other of them may find. In this we, perhaps, see the origin of the gregarious instinct in most birds, if not in all. Self-interest first makes a habit, which becomes, by degrees, a want, and so a necessity; for if "custom is the king of all men," as Pindar has pronounced it to be, so is it the king of all birds, and, equally, of all other animals.

I think, myself, that their association with the rooks tends to make these crows more social. They get to feed more as they do, and this brings them more together. In the evening I have, sometimes, seen a few fly down into a plantation where rooks roosted, and which they already filled, and one I once saw flying, with a small band of them, on their bedward journey. Whether this bird, or the others, actually roosted with the rooks, for the night, I cannot say, but it certainly looked like it. On the other hand, if one watches rooks, one will, sometimes, see what looks like a reversion, on the part of an individual or two, to a less advanced social state than that in which the majority now are. Whether there are solitary rooks, as there are rogue elephants, I do not know, but the gregarious instinct may certainly be for a time in abeyance

with some, if not with all of them. I have watched one feeding, sometimes, for a length of time, quite by itself. Not only, on such occasions, have there been no others with it, but often none were in sight, nor did any join it, when it flew up. Nothing, in fact, can look more solitary than these black specks upon the wide, empty warrens, or the still more desolate marshes—fens, as they are called, though, as I say, Icklingham is separated from the real fen-lands by some seven miles. These fens are undrained, and unless the weather has been dry for some time, it is difficult to get about in them. At first sight, indeed, it looks as though one could do so easily enough, for the long, coarse grass grows in tufts, or cushions—one might almost call them—each one of which is raised, to some height, upon a sort of footstalk. But if one steps on these they often turn over, causing one to plunge into the water between them, which their heads make almost invisible. These curious, matted tufts were used here in old days for church hassocks—called *pesses*—and several of them, veritable curiosities, are now in the old thatched church at Icklingham, which has been abandoned—why I know not—and is fast going to ruin.

Rooks sometimes visit these marshes for the sake of thistles which grow there, or just on their borders, the roots of which they eat, as do also, I believe, some of the hooded crows, since I have seen them excavating in the same places. I know of no more comfortless sight than one or two of these crows standing about on the sodden ground, whilst another sits motionless, like an overseer, in some

solitary hawthorn bush, in the grey dawn of a cold winter's morning. In the dank dreariness they look as dank and dreary themselves, and seem to be regretting having got up. There is, indeed, something particularly shabby and dismal-looking in the aspect of the hooded crow, when seen under unfavourable circumstances. They impress one, I believe, as squalid savages would—as the Tierra del Fuegians did Darwin. The rook, at all times, looks much more civilised, even when quite alone. I am not sure whether the latter bird, to return to his occasional adoption of less social habits, ever roosts alone, but I have some reason to suspect that he does. I have seen one flying from an otherwise untenanted clump of trees, before the general flight out from the rook-roost, two or three miles distant, had begun; to judge by appearances, that is to say, for the usual stream in one direction did not begin till some little time afterwards. A populous roosting-place drains the whole rook population of the country, for a considerable distance all around it —far beyond that at which this rook was from his— and in January, which was the date of the observation, such establishments would not have begun to break up. This process, which leads to scattered parties of the birds passing the night in various new places, does not begin before March.

I had heard this particular rook cawing, for some time, before I saw it, and, on other occasions, I have been struck by hearing solitary caws, in unfrequented places, at a similarly early hour. Some rooks, therefore, may be less social in their ways than the majority, and if these could be separately studied,

we might know what all rooks had once been. The present natural history book contents itself with a summary of the general habits of each species, as far as these are known or surmised, or rather as far as one compiler may learn them from another *sæcula sæculorum*. It is to be hoped that, some day in the future, a work may be attempted which will record those variations from the general mode of life, which have been observed and noted down by successive generations of field-naturalists. A collection of these would help as much, perhaps, to solve some of the problems of affinity, as the dissection of the body, and there would be this advantage in the method, viz., that any species under discussion would be less likely to leave a still further gap in the various classificatory systems, by disappearing during the process of investigation.

I have said that rooks and crows meet and mingle together, as though they were of the same species, but is there, to the boot of this, some special relation—what, it would puzzle me to say—existing between them? I remember once, whilst standing under a willow tree by the little stream here, my attention being attracted by a hooded crow, which, whilst flying, kept uttering a series of very hoarse, harsh cries, "Are-rr, are-rr, are-rr" (or "crar")—the intonation is much rougher and less pleasant than that of rooks. He did not fly right on, and so away, but kept hovering about, in approximately the same place, and still continuing his clamour. I fancied I heard an answer to it from another hooded crow in the distance, and then, all at once, up flew about a score of rooks and joined him.

For some minutes they hovered about, over a space corresponding with a fair-sized meadow, the crow making one of them, and still, at intervals, continuing to cry, the rooks talking much less. Then, all at once, they dispersed again over the country. What, if anything, could have been the meaning of this *rendezvous?* All I can imagine is that, when the rooks heard the repeated cries of the crow, they concluded he had found something eatable, and, therefore, flew up to share in it, but that, seeing nothing, they hovered about for a time on the look-out and then gave it up and flew off. I can form no idea, however, of what it was that had excited the crow, for excited he certainly seemed—it was a sudden burst of "are"-ing. He did not go down anywhere, so that it can have had nothing to do with a find, and I feel sure from the way he came up, and the place and distance at which he began to cry, that he had not seen me. This, then, was my theory, at the time, to account for the action of the rooks; but on the very next day something of the same sort occurred, which was yet not all the same, and which could not be explained in this way. This time, when a crow rose with his "crar, crar" and flew to some trees, a number of rooks rose also from all about, and after circling a little, each where it had gone up, flew to a plantation, where shortly the crow flew also. Here, again, there was no question of the crow having found anything, for he rose from where he had for some time been, and flew straight away. Nor could the rooks have imagined that he had, for they all rose as at a signal, and, without going to where he had been, flew to somewhere

near where he had gone, and here they were shortly joined by him. Certainly the rooks were influenced by the crow—the crow afterwards by the rooks, I think—but in what way, or whether there was any definite idea on the part of either of them, I am unable to say. Birds of different species often affect one another, psychically, in some way that one cannot quite explain. I have seen some small tits flying, seemingly full of excitement, with the first band of rooks from the roosting-place in the morning, and, evening after evening, a wood-pigeon would beat about amongst the hosts of starlings, which filled the whole sky around their dark little dormitory. He would join first one band and then another, seeming to wish to make one of them, and this he continued to do almost as long as the starlings remained. Peewits, again, seem to have an attraction for starlings, and other such instances, either of mutual or one-sided interest—generally, I think, the latter—may be observed. We need not, I think, assume that every case of commensalism amongst animals has had a utilitarian origin, even when we can now see the link of mutual benefit.

Rooks, when once introduced, are not birds that can be lightly dismissed. The most interesting thing about them, in my opinion, is their habit of repairing daily to their nesting-trees during the winter. Two visits are paid—at least two clearly marked ones—one in the morning, the other in the later afternoon, taking the shortness of the days into consideration. The latter is the longer and more important one, and, to give a general idea of what happens upon it, I will describe the behaviour of

some birds on which I got the glasses fixed, whilst watching, one Christmas, a small rookery, in some elms near the house. It is always stated that rooks visit their nests, during the winter, in order to repair them. The following slight but accurate account of what the birds really do during these visits, is to be read in connection with that statement, which, as it appears to me, is either inaccurate, or, at least, not sufficiently full. Towards 3, then, as I have it, like Mr. Justice Stareleigh, in my notes, the rooks flew in, and of these a certain number settled in the largest elm of the group. This contained, besides other nests, two, if not more, that were built close against each other, making one great mass of sticks. One rook perched upon the topmost of these nests, whilst another sat in the lower one. The standing rook kept uttering deep caws, and, at each caw, he made a sudden dip forward, with his head and whole body. At the same time he shot up and spread open the feathers of his tail, which he also arched, becoming, thus, a much finer figure of a bird. The action seemed to express sexual emotion, with concomitant bellicosity, and the latter element was soon manifested in a spirited attack upon the poor sitting rook, who was, then and there, turned out of the nest. Shortly afterwards, a pair of rooks peaceably occupied this same lower nest, and continued there for some time. One of them sat in it, and, looking long and steadily through the glasses, I could see the tail of this bird thrown, at short intervals, spasmodically upwards. Then, as the raised and spread feathers were folded and lowered, the anal portion of the body was

moved—wriggled—in a very special and suggestive manner, about which I shall have more to say when I come to the peewit. Whilst the sitting bird was behaving in this way, the other one of the pair—which I put down as the female—stood beside him, and as she occasionally bent forward towards him, the black of her feathers becoming lost in his, I felt assured that she was cossetting and caressing him, much as the hen pigeon caresses the male, whilst he sits brooding on the place where the nest will be. There were also several other combats, and more turnings of one bird out of the nest, by another. At 3.15 four rooks sit perched on the boughs, all round the great mass of sticks, but not one upon it. One of the four bends the head, with a look and motion as though about to hop down. Instantly there is an excited cawing—half, as it seems, remonstrative, half in the tone of "Well, if you do, then I will, too,"—from the other three, which is responded to, of course, by the first, the originator of the uproar, and then all four drop on to the sticks, a pair upon each nest. By 3.20 every rook is gone, but in ten minutes they are all back, again, with much cawing. Four birds—the same four as I suppose—are instantly on the great heap, but as quickly off it, again, amongst the growing twigs, and this takes place three or four times in succession. Two others, though they never come down upon the heap, remain close beside it, and seem to feel a friendly interest in it. Sometimes they fly away for a little, but they return, again, and sit there as before, their right to do so seeming to be admitted. Thus there are six birds in all, who seem primarily

interested in the great heap of sticks, which may, perhaps, indicate that it is composed of three rather than of two nests. Once, however, for a little while, another rook is associated with the six, making seven. At 3.45 the rooks again fly off, but return in another ten minutes, and this time the tree with the great communal nest in it is left empty. There is a great deal of cawing, mingled with a higher, sharper note, all very different to the cries made by the rooks, at this same time of the year, in their roosting-places, or when leaving or returning to them in the morning or evening. It was for this latter purpose, doubtless, that the final exodus took place at a little past 4. During the last visit no nest was entered by any bird.

Do the rooks, then, come to their nests in winter, in order to repair them? Not once, so far as I could catch their actions, did I see one of these lift a stick, and their behaviour on other occasions, when I have watched them, has been more or less the same. On the other hand we have the combats, the clamorous vociferation, the caressing of one bird by another, the raising and fanning of the tail, with the curious wriggling of it—bearing, in my mind, a peculiar significance—everything, in fact, to suggest sexual emotion. To me it appears that the nests are visited rather for the sake of sport and play, than with any set business-like idea of putting them in order. The birds come to them to be happy and excited, to have genial feelings aroused by the sight of them—

"Venus then wakes and wakens love"

They come, in fact, as it seems to me, in an emotional state a good deal resembling that of the bower-birds of Australia, when they play at their "runs" or "bowers"; nor do the nests now—though in the spring they were true ones—differ essentially, as far as the purpose to which they are put is concerned, from these curious structures, of which Gould says: "They are used by the birds as a playing-house, and are used by the males to attract the females." This latter statement is certainly true, in the case, at least, of the satin bower-bird (*Ptilorhynchus violaceus*), which I have watched at the Zoological Gardens. That the mainspring, so to speak, of this bird's actions is sexual, no naturalist, seeing them, could doubt. But was the "bower" originally made for the purpose which it now serves? Did the idea of putting it to such a use precede its existence in some shape or form, or did it not rather grow out of something else, because about it, as it then was, certain emotions were more and more indulged in, till at last it became the indispensable theatre for their display? Then, as the theatre grew, no doubt the play did also, and *vice versâ*, the two keeping pace with each other. I believe that this original something was the nest, and that when we see a bird toy, court, or pair upon the latter—thus putting it to a use totally different from that of incubation, but similar to that which is served by the bower—we get a hint as to the process by which the one structure has given rise to the other.

Wonderful as is the architecture and ornamentation of some of the bowers, as we now know them,

especially the so-called garden of *amblyornis*, their gradual elaboration from a much simpler structure presents no more difficulty than does that of a complicated nest from a quite ordinary one. All that we want is the initial directing impulse, and this we have when once a bird uses its nest, not only as a cradle for its young, but, also, as a nuptial bed or sporting-place. In a passage of this nature, the nest, indeed, must remain, but why should it not? Let us suppose that, like the rooks, the bower-birds —or, rather, their ancestors—used, at one time, to use their old nests of the spring, as play-houses during the winter. If, then, they had built fresh nests as spring again came round, might they not gradually have begun to build fresh play-houses too? The keeping up of the old nest—but for a secondary purpose—would naturally have passed into this, and the playing about it would, as naturally, have led to the keeping of it up. That duality of use should gradually have led to duality of structure—that from one thing used in two different ways there should have come to be two things, each used in one of these ways—does not seem to me extraordinary, but, rather, what we might have expected, in accordance with the principle of differentiation and specialisation, which has played so great a part in organic evolution. It is by virtue of this principle that limbs have been developed out of the vertebral column, and the kind of advantage which all vertebrate animals have gained by this multiplication and differentiation of parts, in their own bodily structure, is precisely that which a bird of certain habits would have gained, by a similar increase in the number and

kind of the artificial structures made by it. It is, indeed, obvious that the "bower," in many cases, could not be quite what it is, if it had also to answer the purpose of a nest, and still more so, perhaps, that the nest could never have made a good bower. The extra structure, therefore, represents a greater capacity for doing a certain thing—just as do the extra limbs—which makes it likely that it has been evolved from the earlier one, in accordance with the same general law which has produced the latter.

Thus, in our own rook we see, perhaps, a bower-bird *in posse*, nor is there any wide gap, but quite the contrary, between the crow family and that to which the bower-birds belong. "The bower-birds," says Professor Newton, "are placed by most systematists among the *Paradiseidæ*," and Wallace, in his "Malay Archipelago," tells us that "the *Paradiseidæ* are a group of moderate-sized birds allied, in their structure and habits, to crows, starlings, and to the Australian honey-suckers." It is, surely, suggestive that the one British bird that uses its nest—or nests, collectively—as a sort of recreation ground, where the sexes meet and show affection, during the winter, should be allied to the one group of birds that make separate structures, which they use in this same manner. Of course there are differences, but what I suggest is that there is an essential similarity, which, alone, is important. Probably the common ancestor of the bower-birds was not social in its habits like the rook, and this difference may have checked the development of the bower in the latter bird. As far, however, as the actions of the two are concerned, they do not appear

to me to differ otherwise than one might expect the final stages of any process to differ from its rough and rude beginnings. The sexual impulse is, so it seems to me, the governing factor in both, so that, in both, it may have led up to whatever else there is. In regard to the rooks, they did not, when I watched them, appear to be repairing their nests. I think it quite likely, however, that they do repair them after a fashion, though I would put another meaning upon their doing so. That, being at the nest, there should often be some toying with and throwing about of the sticks, one can understand, and also that this should have passed into some amount of regular labour: for all these things—with the emotional states from which they spring—are interconnected through association of ideas, so that one would glide easily into another, and it is in this, as I believe, that we have the rationale of that amount of repairing which the rook does do. Personally, as said before, I have seen little or nothing of it.

When we consider that many birds are in the habit of building one or more supernumerary nests —not with any definite purpose, as it seems to me, but purely in obedience to the, as yet, unsatisfied instinct which urges them to build—we can, perhaps, see a line along which the principle of divergence and specialisation, as applied to the nest structure, may, on the above hypothesis, have been led. Given two uses of a nest, and more nests made than are used, might not we even prophesy that one of the redundant ones would, in time, serve one of the uses, supposing these to be very distinct, and to have a tendency to clash with one another? Now courting

leads up to pairing, and I can say positively from my own observation that rooks often pair upon the nest. This is the regular habit with the crested grebes, and I have seen it in operation between them after some, or at least one, of the eggs had been laid—possibly they had all been. But this must surely be to the danger of the eggs, so that, as these birds build several nests, natural selection would favour such of them as used separate ones for pairing and laying. It does not, of course, follow that a tendency to make a secondary nest and use it for a secondary purpose would develop itself in any bird that was accustomed to pair or court upon the true one; but it might in some, and, whenever it did, the evolution of the "run" or "bower" would be but a matter of time, if, indeed, it should not be rather held to exist, as soon as such separation had come about. There would be but a slight line of demarcation, as it appears to me, between an extra nest, which was used for nuptial purposes only, and the so-called bowers of the bower-birds. As for the ornamentation which is such a feature of these latter structures, the degree of it differs amongst them, and we see the same thing—also in varying degrees—in the nest proper. The jackdaw, for instance—and the proclivity has been embalmed in our literature—is fond of putting a ring "midst the sticks and the straw" of his, and shags, as I have noticed, will decorate theirs with flowers, green leaves, and bleached spars or sticks. It seems natural, too, that an æsthetic bird, owning two domiciles, one for domestic duties and the other for love's delights, should decorate the latter, more and

more to the neglect of the former. We see the same principle at work amongst ourselves, for even in the most artistic households, the nursery is usually a plain affair compared with the boudoir or drawing-room.

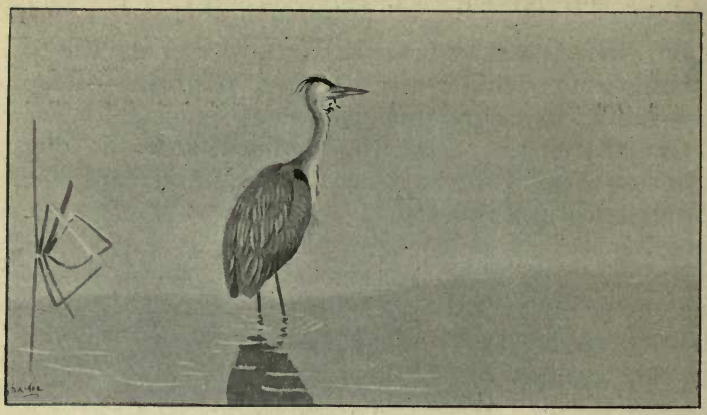
As bower-building prevails only amongst one group of birds—not being shared by allied groups—and as birds, universally almost, make some sort of nest, we may assume that the latter habit preceded the former. If so, the ancestral bower-bird, from which the various present species may be supposed to be descended, would have built a nest before he built a bower. Is it not more probable, therefore, that the new structure should have grown out of the old one, than that the two are not in any way connected? The orthodox view, indeed, would seem to be the reverse of this, for we read in standard works of ornithology that the bowers have nothing to do with the nests of the species making them; whilst, at the same time, complete ignorance as to their origin and meaning is confessed. But if we know nothing about a thing, how do we know that it has nothing to do with some other thing? One argument, brought forward to show that the nests of the bower-bird are not in any way connected with their bowers, is that the former present no extraordinary feature. But if the bower has grown out of the nest, in the way and by the steps which I suppose, there is no reason why the latter—and the bird's general habits of nidification—should not have remained as they were. As long as a single structure was used for a double purpose, the paramount importance of the original one—that of incubation—would have kept it from changing in any great degree, and when

there had come to be two structures for two purposes, that only would have been subjected to modification which stood in need of it. For the rest, as incubation and courtship are very different things, one might expect the architecture in relation to them to be of a very different kind. For these reasons, and having watched rooks at their nests in the winter, and the breeding habits of some other birds, I think it possible (1) that the bower has grown out of the nest, and (2) that the sexual activities of which it is, as it were, the focus, were once displayed about the nest itself. On the whole, however—though I suggest this as a possible explanation—it is perhaps more likely that the cleared arena where so many birds meet for the purposes of courtship—as, *e.g.* the blackcock, capercailzie, ruff, argus pheasant, cock-of-the-rock, &c. &c.—is the starting-point from which the bower-birds have proceeded, especially as one species of the family has not got so very much farther than this, even now.

Rooks, then, to leave speculation and return to fact, are swayed, even in winter, by love as well as by hunger—those two great forces which, as Schiller tells us, rule the world between them. They wake, presumably, hungry; yet, before they can have fed much, make shift to spend a little while on the scene of their domestic blisses. Hunger then looks after them till an hour or so before evening, when they return to their rookeries, and love takes up the ball for as long as daylight lasts. And so, with birds as men—

> "Erfüllt sich der Getriebe
> Durch Hunger und durch Liebe."

But there is a third great ruling power in the life of both, which Schiller seems to have forgotten—sleep —and as its reign, each day, is as long, or longer, than that of the other two conjoined, and as it long outlasts one of them, it may be called, perhaps, the greatest of the three.



HERON FISHING

CHAPTER IV

THERE is a heronry on an estate here, into which, in the early spring, I have sometimes crept, coming before dawn, in silence and darkness, to be there when it awoke. What an awakening! A sudden scream, as though the night were stabbed, and cried out—a scream to chill one's very blood—followed by a deep "oogh," and then a most extraordinary noise in the throat, a kind of croak sometimes, but more often a kind of pipe, like a subdued siren—a fog-signal—yet pleasing, even musical. Sometimes, again, it suggests the tones of the human voice—weirdly, eerily—vividly caught for a moment, then an Ovid's metamorphosis. This curious sound, in the production of which the neck is as the long tube of some metal instrument, is very characteristic, and constantly heard. And now scream after

scream, each one more harsh and wild than the last, rings out from tree to tree. Other sounds—strange, wild, grotesque—cannot even suffer an attempt to describe them. All this through the darkness, the black of which is now beginning to be "dipped in grey." There is the snapping of the bill, too—a soft click, a musical "pip, pip"—amidst all these uncouth noises. On the whole, it is the grotesque in sound—a carnival of hoarse, wild, grotesque inarticulations. Amidst them, every now and then, one hears the great sweep of pinions, and a shadowy form, just thickening on the gloom, is lost in the profounder gloom of some tree that receives it.

Most of the nests are in sad, drooping-boughed firs—spruces, a name that suits them not—trees whose very branches are a midnight, as Longfellow has called them,[1] in a great, though seldom-mentioned poem. Others are in grand old beeches, which, with the slender white birch and the maple, stand in open clearings amidst the shaggy firs, and make this plantation a paradise. Sometimes, as the herons fly out of one tree into another, they make a loud, sonorous beating with their great wings, whilst at others, they glide with long, silent-sounding swishes, that seem a part of the darkness. Two will, often, pursue each other, with harshest screams, and, all at once, from one of them comes a shout of wild, maniacal laughter, that sets the blood a-tingling, and makes one a better man to hear. Whilst sweeping, thus, in nuptial flight, about their nesting-trees, they stretch out their long necks in front of

[1] "As the pine shakes off the snow-flakes
From the midnight of its branches."
—*Hiawatha*, xix.

them, sometimes quite straight, more often bent near the breast like a crooked piece of copper wire. A strange appearance!—everything stiff and abrupt, odd-looking, uncouth, no graceful curves or sweeps. The long legs, carried horizontally, balance the neck behind—but grotesquely, as one gargoyle glares at another. Thus herons fly within the heronry, but as they sail out, *en voyage*, the head is drawn back between the shoulders, in the more familiar way. As morning dawns, the shadowy "air-drawn" forms begin to appear more substantially. Several of the birds may then be seen perched about in the trees, some gaunt and upright, others hunched up in a heap, with, perhaps, one statuesque figure placed, like a sentinel, on the top of a tall, slender larch, the thin pinnacle of the trunk of which is bent over to form a perch.

Other, and much sweeter, sounds begin now to mingle with the harsh, though not unpleasing screams, and, increasing every moment in volume, make them, at last, but part of a universal and most divine harmony. The whole plantation has become a song. Song-thrush and mistle-thrush make it up, mostly, between them, but all help, and all is a music; chatters and twitters seem glorified, nothing sounds harshly, joy makes it melody. There is a time—the daylight of dawn, but not daylight—when the birds sing everywhere, as though to salute it. As the real daylight comes, this sinks and almost ceases, and never in the whole twenty-four hours, is there such an hour again. The laugh, and answering laugh, of the green woodpecker is frequent, now, and mingles sweetly with the loud cooing of the wood-pigeons—not the characteristic

note, but another, very much like that of dovecot pigeons, when they make a few quick little turns from one side to another, moving the feet dancingly, but keeping almost in the same place: a brisk, satisfied sound, not the pompous rolling coo of a serious proposal, nor yet that more tender-meaning note, with which the male broods on the nest, caressed by the female. But the representative of this last, in the wood-pigeon—the familiar spring and summer sound—is now frequently heard, and seems getting towards perfection. So, at last, it is day, and the loud, bold clarion of the pheasant is like the rising sun.

The above is a general picture of herons in a heronry. It is almost more interesting to watch two lonely-sitting birds, upon each of whom, in turn, one can concentrate the attention. They sit so long and so silently, such hours go by, during which nothing happens, and one can only just see the yellow, spear-like beak of the sitting bird pointing upwards amidst the sticks. Only under such circumstances can one really hug oneself in that ecstacy of patience which, almost as much as what one actually sees, is the true joy of watching. But at length comes that for which one has been waiting, and may wait and wait, day after day, and yet, perhaps, not see—the change upon the nest. It comes—"Go not, happy day." There is a loud croak or two in the air, then a welcoming scream, and in answer to it, as her mate flies in, the sitting bird raises herself on the nest, and stretching her long neck straight up—perpendicularly almost, and with the head and beak all in one line with it—pours out a wonderful jubilee of exultant sounds.

Then, standing on the nest together, *vis-à-vis*, and with their necks raised, both the birds intone hoarsely, and seem to glare at one another with their great golden eyes. Then the male bends down his head, raises his crest, snaps his bill several times, and, sinking down, disappears into the nest; whilst the female, after giving all her feathers and every portion of her person a very violent shake, as though to scatter night and sleep to the four winds, immediately flies off. The whole magnificent scene has lasted but a few seconds. As by magic, then, it is gone, and this quickness in departing has a strange effect upon one. The thing was so real, so painted there, as it were—the two great birds, with their orange bills and pale-bright colouring, clear in the morning air. It did not seem as if they could vanish like that. They looked like permanent things, not vanishing dreams. Yet before the eye is satisfied with seeing, or the ear with hearing, the one has flown off silently like a shadow and the other sunk as silently into invisibility. Now there is a great stillness, a great void, and the contrast of it with the flashed vividness of what has just been, impresses itself strangely. It is as though one had walked to some striking canvas of Landseer or Snider, and, as one looked, found it gone. That, however, would be magic. This is not, but it seems so. One feels as though "cheated by dissembling nature."

I have described the welcoming cry raised by the female heron on the arrival of her mate as "a jubilee of exultant sounds," which indeed it is, or sounds like; but what these sounds are—or were—their vocalic value—it is difficult to

recall, even but a few minutes after they have been uttered. Only one knows that they were harshly, screamingly musical, for surely sounds full of poetry must be musical. The actions, however—the alighting of the one bird with outstretched neck, the leaping up at him, as one may almost say, with the marvellous pose, of the other, the vigorous shake, in which inaction was done with, and active life begun, and then that searching, careful contemplation of the nest by the male, before sinking down upon it—all that is stamped upon the memory, and will pass before me, many a night, again, as I lie and look into the dark.

It is the female heron, one may, perhaps, assume, who sits all night upon the nest, being relieved by the male in the morning. The first change, in my experience, takes place between 6 and 9. The next is in the afternoon—from 4 to 5, or thereabouts—and there is no other till the following day. Well, therefore, may the mother bird shake herself before flying swiftly off, after her long silent vigil. Perhaps, however, as darkness reigns during most of this time it is the male heron who really shows most patience, since his hours of duty include the greater part of the day.

It must not be supposed that the above is a description of what uniformly takes place when a pair of sitting herons make their change upon the nest. On the contrary, the actions of both birds vary greatly, and this is my experience in regard to almost everything that birds do. Sometimes the scene is far less striking, at other times it is just as striking, but all the details are different—other cries,

other posturings, all so marked and salient that one might suppose each to be as invariable as it is proper to the occasion. The same general character is, of course, impressed upon them all, but with this the similarity is exhausted. This—and it is largely the case, I think, in other matters—makes any general description of little value. My own view is that, in describing anything an animal does, it is best to pick a case, and give a verbal photograph. Two advantages belong to this process. First, it will be an actual record of fact, as far as it goes, and, in the second place, it will also be a better general description than one given on any other principle. There will be more truth in it, looked at as either the one thing or the other.

The particular pair of herons that supplied me with this particular photograph had a plantation to themselves for their nest—at least, though other herons sometimes visited it, they were the only ones that bred there. I watched them from a little wigwam of boughs that I had put against the trunk of a neighbouring tree, from which there was a good view. They had built in the summit of a tall and shapely larch, and beautiful it was to look up and see nest and bird and the high tree-top set in a ring of lovely blue, so soft and warm-looking that it made one long to be there. The air looked pure and delicate, and the sun shone warmly down upon the nest and its patient occupant. But the weather was not always like this. Once there was a hurricane. The tree, with the nest in it, swayed backwards and forwards in the violent gusts of wind, and now and again there was the crash and

tearing sound of a trunk snapped, or a large branch torn off. But the heron sat firm and secure. There were several such crashes, nor was it much to be wondered at, the plantation being full of quite rotten birches that I might almost have pushed over, myself. In a famous gale here, one Sunday, the firs in many of the plantations were blown down in rows and phalanxes, falling all together as they had stood, and all one way, so that, to see them, it looked as though a herd of elephants—or rather mammoths—had rushed through the place. A tin church was carried away, too—but I was in Belgium during all this stirring time.

A close, firm sitter was this heron, yet not to be compared with White's raven, since the entry of any one into the plantation was sufficient to make her leave the nest. Unfortunately, the nest almost hid her, as she sat, yet sometimes, as a reward for patience, she would move the head, by which I saw it—or at least the beak—a little more plainly. Sometimes, too, she would crane her neck into the air or even stand up in the nest, which was as if a saint had entered the shrine. When she did this it was always to look at the eggs, and, having done so, she would turn a little round, before sitting down on them again. Very rarely I caught a very low and very hoarse note —monosyllabic, a sort of croak—but silence almost always reigned. At first, when I came to watch the nest, I disturbed the bird each time, and again on leaving: afterwards I used to crawl up to the wigwam, and then retire from it on my hands and knees, and, in this way, did not alarm her. Once

in the wigwam, her suspicions soon ceased, and she returned to the nest, usually from sailing high over the plantation, evidently on the watch, but, sheltered as I was, I was invisible even to her keen sight. On one occasion she flew out over the marshlands, and went down upon them. I left the plantation almost at the same time as she did, and, on my way home, I saw her rise and fly towards it again. Halfway there she was joined by her mate, and the two descended upon it, together, most grandly—a really striking sight. Slowly they sailed up, on broad light wings that beat the air with regular and leisurely strokes. Mounting higher and higher, as they neared the plantation, they, at length, wheeled over it at a giddy height, from which, after a few great circling sweeps, they all at once let themselves drop, holding their wings still spread, but raised above their backs, so as not to offer so much resistance to the air. At the proper moment the wide wings drooped again, the rushing fall was checked, and with harsh, wild screams, the two great birds came wheeling down, in narrower and narrower circles, upon the chosen spot. Perhaps the swoop of an eagle may be grander than this, but I doubt it. The drop, especially, gives one, in imagination, the same sort of half-painful sensation that the descent part of a switchback railway does, when one is in it—for one substitutes oneself for the bird, but retains one's own constitution.

Earlier in the year—in cold bleak February—I used to watch this same pair of herons pursuing one another, in nuptial flight, over the half-sandy, half-marshy wastes, that, with the moorland, lie about the

A GRAND DESCENT

Herons coming down on to Nest

p. 80.

UNIV. OF
CALIFORNIA

lonely, sombre spot that they had chosen for their home. This, too, is "a sight for sair een." How grandly the birds move "aloft, incumbent on the dusky air," beating it with slow measured strokes of those "sail-broad vans" of theirs. They approach, then glide apart, and, as they sweep in circles, tilt themselves oddly from one side to another, so that now their upper, and now their under surface catches the cold gloomy light—a fine sight beneath the snow-clouds. With a shriek one comes swooping round upon the other, who, almost in the moment of contact, glides smoothly away from him. The pursuer plies his wings: slow-beating, swift-moving, they pass over the desolate waste, one but just behind the other. Again a "wild, wild" cry from the pursuing bird is answered by another from the one pursued, and then, on set sails, they sink to earth, in a long, smooth, gently descending line, reaching it without another wing-beat. Queer figures they make when they get there. One sits as though on the nest, his long legs being quite invisible beneath him. The other stands in varying attitudes, but all very different from anything one ever sees represented, either in a picture or a glass case. That elegant letter S, which—especially under the latter hateful condition—the neck is, of custom, put into, occurs in the living bird less frequently than one might suppose it would. When resting or doing nothing in particular, herons draw the head right in between the shoulders—or rather wings—which latter droop idly down, and being, thus, partially expanded, like a fan fallen open, cover, with their broad surface, the whole body and most of the legs.

The thighs, so carefully shown in the cases, are quite hidden, and only about half the shank is seen beyond the square, blunt ends of the wings. The beak points straight forward, or almost so. It is a loose, hunched-up pose, not elegant, but very nice; one can smack one's lips over it; it is like a style in writing—a little slipshod perhaps, like Scott's, as we are told;[1] but then *give* me Scott's "slipshod" (!) style—I prefer it to Stevenson's, though Stevenson himself did not. Then, again, when the bird is alarmed or thrown on the alert about anything, the long neck is shot, suddenly, forward and upward, not, however, in a curve, but in a straight line, from the end of which another straight line—the head and beak—flies out at a right angle. The neck, also, makes a somewhat abrupt angle with the body, and the whole has a strange, uncouth aspect, which is infinitely pleasing.

One might suppose that, with its great surface of wing, and the slowness with which it is moved, the heron would rise with some difficulty—as does the condor—and only attain ease and power when at some little height. This, however, is not the case. It will rise, on occasions, with a single flap of the great wings, and then float buoyantly, but just above the ground, not higher than its leg's length—if this can be said to be rising at all. A single flap will take it twenty paces, or more, like this, when, putting its legs down, it stands again, and thus it will continue as long as it sees fit.

From the length of time which herons spend out on the marshes, or adjoining warrens, they must, I

[1] By inappreciative *asses*.

suppose, feed a good deal on frogs, or even less aquatic prey—moles, mice, shrews, as I believe, for I have found the remains of these under their trees, in pellets which seemed to me far too large, as well as too numerous, to be those of owls, the only other possible bird: yet I have not observed them in the pursuit of "such small deer," and herons look for their food far more, and wait for it far less than is generally supposed. See one, now, at the river. For a minute or two, after coming down, he stands with his neck drawn in between his shoulders, and then, with a stealthy step, begins to walk along under the bank, advancing slowly, and evidently on the look-out. Getting a little more into the stream, he stands a few moments, again advances, then with body projecting, horizontally, on either side of the legs—like the head of a mallet—and neck a little outstretched, he stops once more. At once he makes a dart forward, so far forward that he almost—nay, sometimes quite—overbalances, the neck shoots out as from a spring, and instantly he has a fair-sized fish in his bill, which, after a little tussling and quiet insistence—gone through like a grave formal etiquette—he swallows. Directly afterwards he washes his beak in the stream, and then drinks, a little, as though for a sauce to his fish. There is, now, a brisk satisfied ruffle of the plumage, after which he hunches himself up, again, and remains thus, resting, for a longer or shorter time. In swallowing the fish, the long neck is stretched forwards and upwards, and, when it has swallowed it, the bird gives a sort of start, and looks most comically satisfied. There is that about him—something

almost of surprise, if it could be, at his own deediness—which, in a man, might be expressed by, "Come, what do you think of that, now? Not so very bad, is it?" A curious sort of half-resemblance to humanics one gets in animals, sometimes—like, but in an odd, *bizarre* way, more generalised, the thing in its elements, less consciousness of what is felt. They wear their rue with a difference, but rue it is. It is interesting, too, to see the way in which the fish is manipulated. It is not tossed into the air, and caught, again, head downwards, nor does it ever seem to be quite free of the beak, at all points; but keeping always the point, or anterior part of the mandibles, upon it, the heron contrives, by jerking its head about, to get it turned and lying lengthways between them, *en train* for swallowing. The whole thing has a very tactile appearance; it is wonderful with what delicacy and nicety, in nature, very hard, and, as one would think, insensitive material may be used. How, in this special kind of handling, does the human hand, about which so much has been said, excel the bird's beak? The superiority of the former appears to me to lie, rather, in the number of things it can do, than in the greater efficiency with which it can do any one of them. It is curious, indeed, that the advantage gained here is due to the principle of generalisation, as against that of specialisation, which last we see more in the foot.

In its manipulation of the fish the serratures in the upper mandible of its bill must be a great help to the heron, and this may throw some light on the use of the somewhat similar, though more pronounced, ones in the claw of its middle toe. Concerning

this structure, Frank Buckland—whose half-part edition of White's "Selborne" I have at hand —says: "The use of it is certainly not for prehension, as was formerly supposed, but rather, as its structure indicates, for a comb. Among the feathers of the heron and bittern can always be found a considerable quantity of powder. The bird, probably, uses this comb to keep the powder and feathers in proper order." Why "certainly"? And how much of observation does "probably" contain? This is what Dickens has described as making a brown-paper parcel of a subject, and putting it on a shelf, labelled, "Not to be opened." But, "By your leave, wax," and I shall open as many such parcels as I choose. It is possible, indeed, that the heron's serrated claw may not be, now, of any special use. It may be a survival, merely, of something that once was. If, however, it is used in a special manner, what this manner is can only be settled by good affirmative evidence, and of this, as Frank Buckland does not give any, we may assume he had none to give. Instead we have "certainly" and "probably." But I, now, have "certainly" seen the heron use his foot to secure an eel, which had proved too large and vigorous for him to retain in the bill, and which he had dropped, after just managing to fly away with it to the mud of the shore. Here, therefore, "probably" the serrated claw was of some assistance, and the fact that this heron flew to the shore, whenever he caught an unwieldy eel, and dropped it there, goes to show that this was his regular plan, viz. to put it down and help hold it with his foot, or two feet. There

was always a little water where the eel was dropped —it was not the shore, to be quite accurate, but only the shallow, muddy water near it—and therefore it was only on one occasion that I saw the foot used in this way, with absolute certainty. But as I did see it this once, I cannot doubt that it was so used each time, as indeed it always appeared to me to be. It is the inner side of each of the two claws that is serrated, and one can imagine how nicely an eel, or fish, thus dropped into the mud, could be pinched between them. This, then, is affirmative evidence. Negatively, I have seen the heron preen itself very elaborately, without once raising a foot so as to touch the feathers. On these occasions the bird often, apparently, does something to its feet, with the beak, what, exactly, it is difficult to say, inasmuch as a heron's feet are hardly ever visible, except while it walks. But the head is brought right down, and then moves slightly, yet nicely, as a hand might that held some long, fine instrument, with which a delicate operation was being performed. Were the extreme tip of the bill to be passed between the serratures of the claw, the motion would be just like this, at least I should think it would.

People about here talk of a filament which they say grows out of one of the heron's toes, and by looking like a worm in the water, attracts fish within his reach, in the same way as does the lure of the angler-fish. In Bury, once, seeing a heron—a sad sight—hanging up in a fishmonger's shop, I looked at its feet, but did not notice any filament. This, indeed, was before I had heard the legend, but my idea is that it has sprung up in accordance with the popular view that the heron always waits, "like

patience on a monument," for his prey to come to him; whereas my own experience is that he prefers to stalk it for himself. I suspect, myself, that when the bird stands motionless, for any very great length of time, he is not on the look-out for a fish or eel, as commonly supposed, but resting and digesting merely. Certainly, should one approach, he might find himself under the necessity of securing it—his professional pride would be touched—but why, if he were hungry, should he wait so long? Why should he not rather do what, as we have seen, he is very well able to do, set out and find his own dinner? It need not take him five minutes to do so. One use, probably, of the long neck is that, from the height of it, the bird can peer out into the stream, as from a watch-tower, which is the simile that Darwin[1] has made use of in regard to the giraffe, an animal whose whole structure has been adapted for browsing in trees, but which has thereby gained this incidental advantage, with the result that no animal is more difficult to approach.

I have given a picture—or, rather, a photograph—of how a pair of sitting herons relieve each other on the nest. It is interesting, also, to see one of them come to it, and commence sitting, when the other is away. Alighting on one of the supporting boughs that project from the mass of sticks, he walks down it with stealthy step and wary mien, the long neck craned forward, yet bent into a stiff, ungraceful S. Upon reaching the nest, he stands for some seconds on its brim, in a curious perpendicular attitude, the legs, body, and neck being

[1] Or the man he quotes—and absorbs.

almost in one straight line, from the top of which the snake-like head and spiked bill shoot sharply and angularly out. Standing thus, he raises himself a-tip-toe once or twice, as though it were St. Crispin's Day, or to get the widest possible view of the landscape, before shutting himself out from it, then stepping into the nest, and sinking slowly down in it, becomes entirely concealed in its deep, capacious cavity. Both here, and, still more, in alighting, one cannot but notice the strange rigid aspect that the bird presents. "Cannot but," I say, because one would like it to be otherwise—graceful, harmonious—but it is not. There are no subtle bends or curves—no seeming symmetry—but all is hard, stiff, and angular. Even the colours look crude and harsh, as they might in a bad oil painting. Nature *is* sometimes "a rum 'un," as Squeers said she was. Here she looks almost unnatural, very different from what an artist who aimed at being pleasing, merely, or plausible, would represent her as. This shows how cautious one ought to be in judging of the merits, or otherwise, of an animal artist. There are many more human than animal experts, and the latter, as a rule, are not artistic, so that, between critical ignorance and uncultured knowledge, good work may go for long before it gets a just recognition. Those who talk about Landseer having stooped to put human expressions into his animals, seem to me to be out of touch at any rate with dogs. Probably the thought of how profoundly the dog's psychology has been affected by long intercourse with man has not occurred to them, it being outside their department. Sure I am

that the expression of the dog in that picture, "The Shepherd's Chief Mourner," and of the two little King Charles spaniels lying on the cavalier's hat, are quite perfect things. Even in that great painting of Diogenes and Alexander—removed, Heaven knows why, and to my lasting grief, from the National Gallery—though here there is an intentional humanising, yet it is wonderful how close Landseer has kept to *civilised* canine expression—though one would vainly seek for even the shadows of such looks in the dogs of savages. As for Diogenes, the blending of reality with symbolical suggestion is simply marvellous. Never, I believe, will any human Diogenes, on canvas, approach to this animal one. Yet this masterpiece has been basely spirited away from its right and only worthy place—its true home—in our national collection, to make room, possibly, for some mushroom monstrosity of the time, some green-sick Euphrosyne or melancholy, snub-nosed Venus (the *modern*-ancient Greek type has often a snub nose). However, no one seems to mind.

I think some law ought to be enacted to protect great works against the changes of fashion. Has not the view that succeeding ages judge better than that in which a poet or artist lived, been pressed a great deal too far, or, rather, has it not for too long gone unchallenged? If something must be gained by time in the power of forming a correct estimate, much also may be lost through its agency. It is true that the slighter merit—that dependent on changing things—dies in our regard, whilst the greater, which is independent of these, lives on in it

and may be better understood as time goes by. But this better understanding belongs to the *élite* of many ages, not to each succeeding age as a whole. And what, too, is understanding, without feeling? Must not the one be in proportion to the other —in all things, at least, into which feeling enters? But if an age sinks, it sinks altogether, both heart and head. We know how Shakespeare fared in the age of Charles the Second, when time had run some fifty years. It would be very interesting, I think, if we could compare an Elizabethan audience with one of our own—full of languid press critics—at a Shakespearean play—King Lear, for instance. Should we not have to confess that the age which produced the thing responded to it—that is, understood it—best? And this, indeed, we might expect—it was in Molière's own day, and he himself was on the stage, when that cry from the pit arose: "Bravo Molière! Voilà la bonne comédie!" But all Shakespeare's excellences—Molière's as well—were of the permanent order, the high undying kind, so that it was of this that his age had to judge, and judged, there can be little doubt—for King Lear, *as he wrote it*, was a popular play—much better than our later one. If we will not confess this with Shakespeare, take Spenser, the delight of his age, whose glorious merits none will deny, though few, now, know anything about them. Why, then, must we think that time is the best judge of men's work, or dwell only on the truth contained in this proposition? There is a heavy *per contra* against it. At the time when a man's reputation is most established, his work may be quite neglected, showing that there is knowledge,

merely, accumulated and brought down through the ages, but no real appreciation—a husk with nothing inside it. That best judgment which we think we get through time, even where it exists, is too often of the head only, whilst more often still it is nothing at all, a mere assurance received without question—as we take any opinion from anybody, when we neither know nor care anything about the subject of it. How easy to agree that Milton's greatness is more recognised, now, than it was, when we have never yet been able, and never again intend to try, to read the "Paradise Lost"! It is the same with our detractions. If all the inappreciative, silly things said about Pope are really meant by the people who say them—as they seem to wish us to believe, and, as for my part, I do not doubt—if they really *cannot* enjoy "The Rape of the Lock," "The Dunciad," or the various "Essays," then, in the matter of Pope, what a dull age this must be, compared to that of Queen Anne! And are we really to believe that Goethe, Scott, Shelley, with the rest of their generation, were mistaken about Byron, whilst we of to-day are not? What was it that Scott's, that Shelley's organism thrilled to, when they read him, with high delight, if some microscopic creature who reads him now is right when he finds him third-rate? It is very odd, surely, if the most gifted spirits of an age do really "see Helen's beauty in a brow of Egypt" in this way. To me it seems less puzzling to suppose that successive generations have, as it were, varying sense organs, which are acted upon by different numbers of vibrations of the ether, so that for one to belittle the idol of another, is as it would be for the ear to

fall foul of millions in a second, it being sensitive, itself, only to thousands. We do, indeed, admit the "*Zeitgeist*," but if ever we allow for it when we play the critic, it is always in favour of our own perspicuity—and this against any number of past spiritual giants. This is an age in which most things are questioned. Is it not time for that dogma of what we call "the test of time"—by which everybody understands his own time—to be questioned, too?

"In April," says the rhyme, "the cuckoo shows his bill." Somewhat late April, in my experience, at least about this bleak, open part of Suffolk, which, however, contrary to what might be expected, seems loved by the bird. Almost opposite to my house, but at some little distance from it, across the river, there is a wide expanse of open, sandy land, more or less thinly clothed with a long, coarse, wiry grass, and dotted, irregularly, at very wide intervals, with elder and hawthorn trees and bushes—a desolate prospect, which I prefer, myself, to one of cornfields, unless the corn is all full of poppies and corn-flowers, which, indeed, it is here, and I am told it is bad agriculture. If that be so, then, *à bas* the good! Part of this space, where the sand encroaches on the grass, till it is shared, at last, only by short, dry lichen, which the rabbits browse, I call the amphitheatre, it being roughly circular in shape. One solitary crab-apple tree—from the seed, no doubt, of the cultivated kind—growing on its outer edge, is a perfect glory of blossom in the spring, and becomes, then, quite a landmark. This barren space is a favourite gathering-ground of the stone-curlews;

whilst cuckoos seem to prefer the more grassy expanse, flying about it from one lonely bush or tree to another, and down a wild-grown hedge that tops a raised bank on one side, running from a tangled plantation standing sad and sombre on the distant verge. Beyond, and all around, is the moorland; whilst nearer, through a reedy line, the slow river creeps to the fenlands. I have seen sights, here, to equal many in spots better known for their beauty, not meaning to undervalue these; but as long as there is sun, air, and sky, one may see almost anything anywhere. Take an early May morning—fine, but as cold as can be. Though the sun is brilliant in a clear, blue sky, the earth is yet white with frost, and over it hang illuminated mists that rise curling up, like the smoke from innumerable camp-fires. A rabbit, sitting upright with them all around him, looks as though he were warming his paws at one, and cuckoos, flitting through the misty sea, appearing and fading like the shades of birds in Hades, make the effect quite magical. Nature's white magic this—oh short, rare glimpses of a real fairyland, soon to be swallowed up in this world's great tedium and commonplace! It is in the afternoon, however, from 5 o'clock or thereabouts, and on into the evening, that the cuckoo playground is best worth visiting. Quite a number of cuckoos—a dozen sometimes, or even more—now fly continually from bush to bush, or sit perched in them, sometimes two or more in the same one. They fly irregularly over the whole space, and, by turns, all are with one another, and on every bush and tree that there is. Two will be here, three or four there,

half-a-dozen or more somewhere else, whilst the groups are constantly intermingling, the members of one becoming those of another, two growing into four or five, these, again, thinning into two or one, and so on. But during the height of the play or sport, or whatever we may term it, there is hardly a moment when birds may not be seen in pursuit, or, rather, in graceful following flight, of one another, over some or other part of the space. This space —an irregular area of about 1100 paces in circumference—they seldom go beyond or leave, except for good, and as they repair to it daily, at about the same times, this makes it, in some real sense, their playground, as I have called it.

But, now, what is the nature of the play, and in what does the pleasure consist? If it be sexual, as I suppose, then it would seem as if the passions of the cuckoo were of a somewhat languid nature. The birds, even when there is most the appearance of pursuit, do not, in a majority of cases, seem to wish to approach each other closely. The rule is that when the pursued or leading cuckoo settles in a tree or bush, the pursuing or following one flies beyond it, into another. Should the latter, however, settle in the same bush, the other, just as he alights—often on the very same twig—flies on to the next. This certainly looks like desire on the part of the one bird; but where two or more sit in the same tree, or in two whose branches interpenetrate, they show no wish for a very near proximity. The delight seems to be in flying or sitting in company, but the company need not be close. That the sexual incentive is the foundation-stone

of all, can hardly be doubted, but this does not appear to be of an ardent character, and perhaps social enjoyment, independent of sex, may enter almost as largely. After all, however, the same may be said of the sportings of peewits and other birds, when the breeding-time is only beginning, so that, perhaps, there is not really any very distinctive feature. Be it as it may, this sporting of cuckoos is a very pretty and graceful thing to see. Beginning, as I have said, in the latter part of the afternoon, it is at its height between 6 and 7 o'clock, then gradually wanes, but lasts, as far as odd pairs of birds are concerned, for another hour or more. As may be imagined, it does not proceed in silence; but what is curious—yet very noticeable—is that the familiar cuckoo is not so often heard. Far more frequent is a noisy "cack-a-cack, cack-a-cack," a still louder "cack, cack, cack"—a very loud note indeed—the loud, single "cook" disjoined from its softening syllable, and the curious "whush, whush" or "whush, whush, whush-a-whoo-whoo." The last is very common, seems to express everything, but is uttered, I think, oftenest when the bird is excited. Again, instead of "cuckoo," one sometimes hears "cuc-kew-oop," the last syllable being divided, with a sort of gulp in the throat, making it a three-syllabled cry. This difference is very marked, and, moreover, the intonation is different, being much more musical. All these notes, and others less easy to transcribe, are uttered by the bird, either flying or sitting. Another one, different from all, and very peculiar, is generally heard under the latter condition, but by no means invariably so. It is

a sharp, thin "quick, quick, quick-a-quick," or "kick, kick, kick-a-kick," pronounced very quickly, and in a high tone. Whether this is the note of the female cuckoo only, I cannot say. I have often heard it in answer to a "cuckoo," but I am not yet satisfied that even this last is uttered by the male bird alone. To this point, however, I will recur.

Now, all the above variants of the familiar "cuckoo"—the "cook," "cack," "cack-a-cack," "cuc-kew-oop," &c.—I have heard both in May and April, as any one else may do who will only listen. But in what other way does the cuckoo "change his tune," which, according to the old rhyme, he does "in June"? "In June he changes his tune." This, at least, is what I take it to mean, and it is so understood, about here. It can, I think, only mean this, and if it means anything else it is equally false in my experience. I think, before putting faith in old country jingles of this sort, one ought to remember two things. First, that ordinary country people are not particularly observant, except, perhaps, of one another; and then, that, as a general principle—this at least is my firm belief—a rhyme will always carry it over the truth, if the latter is not too preposterously outraged. Something, in this case, was wanted to rhyme with June, as with all the other months, in which it happened to come pretty pat. Oh, then, let the cuckoo change his *tune*, for you may hear him do it then as well as at another time. And many poets, too—most, perhaps, now and again—led by this same bad necessity of rhyming, run counter to truth in just

the same way. Rhyme, indeed, is in many respects a pernicious influence. It is constraining, cramps the powers of expression, checks effective detail, and coarsens or starves the more delicate shades and touches. Yet, with all the limitations and shacklings which its use must necessarily impose, we have amongst us a set of purists who are always crying out against any rhyme which is not absolutely exact, though that it is sufficiently so to please the ear—and what more is required?—is proved by this, that many of our best-loved couplets rhyme no better—and by this, that the ear is pleased with rhythm alone, as in blank verse. And so the fetters, instead of being widened, as they ought to be, are to be pulled closer and closer, and, to get an absolute jingle, all higher considerations—and there can hardly be one that is not higher—are to be sacrificed. I doubt if there has ever been a poet whose own ear would have led him to be so nice in this way; but so-called critics —for the most part the most artificial and inappreciative of men—weave their net of nothing around them. Happy for our literature, and for peoples still to be moved by it, to whom what was thought by the old British pedants to constitute a cockney rhyme will be a matter but of learned-trifling interest—if of any—when "these waterflies" are disregarded! By great poets I would be understood to mean. As for the other ones, "*de minimis*"—yes, and "*de minoribus*," too, here—"*non curat lex.*" *Mais laissons tout cela.*

There can hardly be a better place for observing the ways of cuckoos than this open amphitheatre

which I have spoken of. It is not only their playing-ground, but their feeding-ground, too, and the way in which they feed is very interesting—at least, I think it so. The few hawthorns and elders that are scattered about, serve them as so many watch-towers. Sitting, usually, on some top bough of one, they seem to be resting, but really keep a watch upon the ground. The moment their quick eye catches anything "of the right breed" there, they fly down to it, swallow it on the spot, and then fly back to their station again. When they have exhausted one little territory they fly to a bush commanding another, and so from bush to bush. They always fly down to a particular spot, and in a direct line, without wavering. This proves that they have seen the object from where they were sitting, though often it is at a distance which might make one think this impossible. Their eyesight must be wonderfully good, but that, of course, one would expect. I have seen a cuckoo fly from one bush like this, and return to it, again, eight or nine times in succession, at short, though irregular, intervals. Both on this and on other occasions, whenever I could make out what the bird got, it was always a fair-sized, reddish-coloured worm, very much like those one looks for in a dung-heap, to go perch or gudgeon fishing. When the bush was near I could see this quite easily through the glasses, if only the bird showed the worm in its bill, as it raised its head. As a rule, however, it bolted it too quickly, whilst it was still indistinguishable amidst the grass. Now, from time to time, we have accounts of

cuckoos arriving in this country somewhat earlier than usual—in March, say, instead of April—and these have been discredited on the ground that the proper insects would not then be ready for the bird, so that it would starve; though as birds, like the poor in a land of blessings, sometimes do starve, I can hardly see the force of this argument. However, here is the cuckoo feeding—largely, as it seems to me—upon worms, which are not insects, and this might make it possible for it to arrive, sometimes, at an earlier season, and yet find enough to eat. It is easy to watch cuckoos feeding in this way in open country, such as we have here, and a fascinating sight it is. Were I to see it every day of my life, I think I should be equally interested, each time. But is it an adaptation to special surroundings, or the bird's ordinary way of getting its dinner? I think the latter, for I have seen it going on in one of the plantations, here, from shortly after daybreak. Here the birds flew from the lower boughs of oaks and beeches, and their light forms, crossing and recrossing one another in the soft, pure air of the early morning, had a very charming effect. Indeed, I do not know anything more delightful to see. Though, usually, the cuckoo eats what it finds where it finds it, yet, once in a while, it may carry it to the bush, and dispose of it there. I have, also, seen it fly up from the bush, and secure an insect in the air, returning to it, then, like a gigantic fly-catcher. Such ways in such a bird are very entertaining.

My idea is that the cuckoo is in process of becoming nocturnal—crepuscular it already is—owing to the persecution which it suffers at the

hands of small birds. This is at its worst during the blaze of day. It hardly begins before the sun is fairly high, and slackens considerably as the evening draws on. Accordingly, as it seems to me, the cuckoo likes, in the between-while, to sit still, and thus avoid observation, though it by no means always succeeds in doing so. It is frequently annoyed by one small bird only, which pursues it, from tree to tree, in a most persevering manner, perching when it perches, sometimes just over its head, but very soon flying at it, again, and forcing it to take flight. This is not like the shark and the pilot-fish, but yet it always reminds me of it. I am not quite sure, however, whether the relation may not sometimes be a friendly one, not, indeed, on the part of the cuckoo, but on that of its persevering attendant. All over the country cuckoos are, each year, being reared by small birds of various species. When the spring comes round again, have these entirely forgotten their experience of the season before? If not, would not the sight, and, perhaps, still more, the smell of a cuckoo, rouse a train of associations which might induce them to fly towards it, in a state of excitement, and would it not be difficult to distinguish this from anger? Moreover, the probability, perhaps, is that the young cuckoos, as well as the old ones, return to the localities that they were established in before migration, and, in this case, they would be likely to meet their old foster parents again. It is true that the real parent and offspring, amongst birds, meet and mingle, in after life, without any emotion upon either side, as far, at least, as we can judge; but we must

remember what a strange and striking event the rearing of a young cuckoo must be in the life of a small bird, at least the first time it occurs. The smell, also, would not be that of its own species, so that there would be more than appearance to distinguish it. In fact, the thing having been peculiar, the feelings aroused by it may have been stronger, in which case the memory might be stronger too, and revive these feelings, or, at least, it might arouse some sort of emotion, possibly of a vague and indistinct kind. Smell is powerful in calling up associations, and I speculate upon the possibility of its doing so, here, because the plumage of the young cuckoo, when it left its foster-parents, would have been different to that in which it must return to them. However, these are dreams. There is certainly much hostility on the part of small birds to the cuckoo, but perhaps it is just possible that *l'un n'empêche pas l'autre.*

The cuckoo, when thus mobbed and annoyed, is supposed to be mistaken for a hawk. But do his persecutors fear him, as a hawk? My opinion is that they do not, and that even though they may begin to annoy him, under the idea that he is one, they very soon become aware, either that he is not, or, at least, that they need not mind him if he is. It is even possible that small birds may, long ago, have found out the difference between a hawk and a cuckoo, but that the habit, once begun, continues, so that it is, now, as much the thing to mob the one as the other. Be this as it may, I do not think that hawks suffer from this sort of annoyance, to anything like the

same extent that cuckoos do. They have always seemed to me to be pretty indifferent, and the *canaille* to keep at a wary distance, whereas I have seen a chaffinch plunge right down on the back of a cuckoo, who ducked his head, and moved about on the branch where he was sitting, in a manner, and with a look, to excite pity, before flying off it, pursued by his petty antagonist. But hawks—even kestrels—may sit in trees for hours unmolested, though the whole grove know of their presence there.

Whilst watching the cuckoos sporting in their playground, and on other occasions, I have tried to come to a conclusion as to whether the male only, or both the sexes cuckoo. I have not, however, been able to make up my mind, and to me the point seems difficult to settle. (It has been settled, I know, but I don't think that settles it.) The sexes being indistinguishable in field observation, we have to apply some test whereby we may know the one from the other, before we can say which of the two it is that cuckoos on any one occasion. But what test can we apply, other than the bird's actions, and until we know how these differ in the sexes, how can we apply it? For how long, too, as a rule, can we watch any one bird, and when two or more are together how can we keep them distinct? Some crucial acts, however, there are, which one sex alone can perform, and if a man could spend a week or two in watching, for a reasonable length of time each day, cuckoos that in this way had declared themselves to be females, he would then be able to speak, on this point, with authority. One way,

indeed, he might prove the thing in a moment, but not the other way. For instance, if he were to see a cuckoo lay an egg, and if that cuckoo cuckooed, the assumption that the male bird alone can do so would be, at once, disproved; but if it merely did not cuckoo, the question would lie open, as before. The chance, however, of making such an observation as this is an exceedingly small one. We must think of some other that would be equally a test. Certain activities may bring the sexes together, by themselves, but nidification, incubation, and the rearing of the young, are all non-existent in the case of the cuckoo. The problem cannot be solved in the way that I have solved it, with the nightjar. There is, however, the nuptial rite, and if we could see this performed, and were able to keep the sexes distinct, for some time afterwards, something, perhaps, might be got at. Let us suppose, then, that two cuckoos are observed under these circumstances, and that the male, only, cuckoos. Here, again, this would be mere negative evidence, in regard to the point in dispute. Either both the birds, or the female only, must cuckoo, or else the observation, so difficult to make, must be repeated indefinitely, and, moreover, each time that neither bird cuckooed—which might very often be the case—nothing whatever would have been gained.

This is the view I take of the difficulties which lie in the way of really knowing whether the male and female cuckoo utter distinct notes. Short of the test I have suggested, one can only, I believe, come to a conclusion by begging the question—which has accordingly been done.

Personally, as I say, I have not made up my mind; but I incline to think that both the sexes cuckoo. On one occasion, when the behaviour of a pair that I was watching seemed emphatically of a sexual character, the bird which I should have said was the female did so, several times, in full view; and the other, I think, cuckooed also. But here, again, I could not say for certain that the two were not males, and that conduct, which seemed to me eager and amorous, especially on the part of one bird—it was the other that certainly cuckooed—was not, really, of a bellicose character. Another pair I watched for many days in succession, from soon after their first arrival, as I imagine, and when not another cuckoo was to be seen or heard far or near. They took up their abode in a small fir plantation, and were constantly chasing and sporting with one another. That, at least, is what it looked like. If what seemed sport was really skirmishing, then it seems odd that two males should have acted thus, without a female to excite them. Would it not be odd, too, for two males to repair, thus, to the same spot, and to continue to dwell there, being always more or less together and following one another about? Though it was early in April, therefore, and though we are told that the male cuckoo arrives, each year, before the female, I yet came to the conclusion that these birds were husband and wife. At first it seemed to me that only one of them cuckooed, but afterwards I changed my opinion, though the two never did so at the same time, or answered each other, whilst I had them both in view. This, however, had they both been males, they probably would have

done. Space does not allow of my giving these two instances *in extenso*, so I will here conclude my remarks about the cuckoo; for I have nothing to say —at least nothing new and of my own observation —in regard to its most salient peculiarity—though for saying nothing, upon that account, I think I deserve some credit.

MALE WHEAT-EAR

CHAPTER V

ANOTHER bird, very characteristic, whilst it stays, of the steppes of Icklingham, is the wheat-ear. A blithe day it is when the first pair arrive, in splendid plumage always—the male quite magnificent, the female, with her softer shades, like a tender after-glow to his fine sunset. Both are equally pleasing to look at, but the cock bird is by much the more amusing to watch.

Who shall describe him and all his nice little ways—his delicate little hops; his still more delicate little pauses, when he stands upright like a sentinel; his little just-one-flirt of the wings, without going up; his little, sudden fly over the ground, with his coming down, soon, and standing as though surprised at what he had done; or, lastly and chiefly, his strange, mad rompings—one may almost call them—

wherein he tosses himself a few yards into the air, and comes pitching, tumultuously, down, as though he would tumble all of a heap, yet never fails to alight, cleanly, on his dainty little black legs? This last is "Ercles' vein, a tyrant's vein": and yet he has higher flights, bolder efforts. In display, for instance, before the female, he will fly round in circles, at a moderate height, with his tail fanned out, making, all the while, a sharp little snappy sort of twittering, and clapping his wings from time to time. He does this at irregular, but somewhat long intervals, but sometimes, instead of a roundabout, he will mount right up, and then, at once, descend, in that same tumultuous, disorderly sort of way, as though he were thrown, several times, by some unseen hand, in the same general direction—it looks much more like that than flying. But there is variation here, too, and the bird's ruffling, tousled descent, may be exchanged for a drop, plumb down, till, when almost touching the ground, it slants off, and flits over it, for a little, before finally settling. The ascent is by little spasms of flight, divided from one another by a momentary cessation of effort, during which the wings are pressed to the sides.

Larks will mount something in this way, too, and, after descending for some time, parachute-wise, and singing, one will often fold his wings to his sides, and shoot down, head first—a little "jubilee plunger"—for his song is a jubilee. Another way to come down is at a tangent, and sideways, the tip of one wing pointing the way, like the bowsprit of a little ship. Yet another is by terraces, as I call it; that is to say, after the first dive down from where it

has hung singing, the bird sweeps along, for a little, at one level—which is a terrace—then dives, again, to another one, a little below it, sweeps along on that, descends to a third, and so on, down to the ground. There is, indeed, a good deal of individual variety in the way in which larks fly—at least between any two or more that one may see doing the same thing at the same time—soaring, descending, and so on. The flight itself is of many kinds—as the ordinary, the mount up to the watch-tower ("from his watch-tower in the skies"), the hanging, motionless, on extended wings, the descent, the serene on-sailing, without a stroke, as of the eagle; and, again, the suspension, with wings lightly quivering, as the kestrel hovers. But how different is the character impressed upon these last! What the eagle does in majesty, and the hawk in rapine, that the lark does in beauty only, in music of motion and song.

All this, of course, is in the spring and summer only. In the winter, when they flock, larks fly low over the land, and this they all do in much the same way. Though most of their poetry is now gone, or lies slumbering, yet they are still interesting little birds to watch. They walk or run briskly along the ground, and continually peck down upon it, with a quick little motion of the head. They appear to direct each peck with precision, and to get something each time, but what I cannot say. It may be anything, as long as it is minute; that seems to be the principle—so that, as one sees nothing, it is like watching a barmecide feast. Larks never hop, I believe, when thus feeding, though sometimes the inequalities of the ground give them the

appearance of doing so. They look and move like little quails, crowd not, but keep together in a scattered togetherness, and fly, all together, over the hard earth, often seeming to be on the point of alighting, but changing their minds and going on, so that no man—"no, nor woman either"—can say whether, or when, they will settle. Creeping thus—for, however fast they go, they seem to creep—over the brown fields in winter, the very shape of these little birds seems different to what one has known it. They look flatter, less elongated; their body is like a small globe, flattened at the poles, and the short little tail projects from it, clearly and sharply. A staid tail it is in winter. I have never seen it either wagged or flirted; for between the wagging and flirting of a bird's tail, there is, as Chaucer says about two quite different things, "a long and largé difference." Much charm in these little birdies, even when winter reigns and

"Still through the hawthorn blows the cold wind."

Occasionally one hears, from amongst them, a little, short, musical, piping, note—musical, but

"Oh tamquam mutatus ab illo."

By February, however, larks are soaring and singing, though, at this time, they do not mount very high. The song, too, is not fully developed, and is, often, no more than a pleasant, musical twittering, especially when two or more chase one another through the air. It is curious how often just three birds together do this, a thing I have many times

noticed—not with larks only—and which I believe to lie at the base of any antic—such, for instance, as that of the spur-winged lapwing of La Plata—in which three, and no more, take a part. These trios look like a pair in love, and an interloper, but it may be two wanting, and one not caring; or again, as it has often seemed to me, none of the three may be very much in earnest. Be it as it may, with the larks, at this time, there are some delightful chasings, delightful skimmings and flutterings, and then all three mount into the air, and sing delightfully—a little *Lobegesang*. Nature—wild nature—has two voices, a song of joy and a shriek of agony. Eternally they mingle and sound through one another, but, on the whole, joy largely predominates. But when we come to man we get the intermediates; the proportions change, the shadows lengthen, the sky becomes clouded, one knows not what to think.

In winter the larks, here, as one might expect, keep entirely to the agricultural part of the country that encircles or intersects the numerous barren stretches. As the spring comes on, they spread over these, too, but here they are much outnumbered by their poor relations, the titlarks, to whom such wildernesses are a paradise. Indeed, by his pleasing ways, and, especially, by the beauty of his flight, this sober-suited, yet elegant little bird helps to make them so. With his little "too-i, too-i" note, he soars to a height which, compared, indeed, to the skylark's "pride of place," is as mediocrity to genius; but having attained it, he comes down very prettily—more prettily, perhaps, than does his gifted relative. The delicate little wings are extended, but

raised, especially when nearing the ground, to some height above the back, and the fragile body, suspended between them like the car of a tiny balloon, seems to swing and sway with the air. The tail, though downward-borne with the rest of the bird, feels still some "skyey influences," for it is "tip-tilted," and as "like the petal of a flower," I fancy, as any nose on any face. As the bird nears the heather from which he started—for he especially loves the moorlands—he, too (perhaps all birds have), has a way of gliding a little onwards above it, poised in this manner, which adds much to the grace of his descent. Then, softly sinking amidst it, he sits elastic on a springy spray, or walks with dainty, picked steps over the sandy shoals that lie amidst its tufty sea. This, indeed, is one of his show descents. Not all of them are so pretty. In some the wings are not quite so raised, so that their lighter-coloured under-surface—an especial point of beauty—is not seen. Sometimes, too, the titlark plunges and sweeps earthwards almost perpendicularly, his tail trailing after him like a little brown comet. But, whatever he does, he is a dainty little bird with a beauty all his own, and which is none the less for being of that kind which is not showy, but "sober, steadfast, and demure."

Now does this flight, which I have described—the mounting and return to earth again—more resemble that of a lark or a wagtail? It is the new way to class the pipits with the latter birds, instead of with the former, which, now, they "only superficially resemble." Had they been classed, hitherto, with the wagtails, it would, probably, have been

discovered that they only superficially resembled *them*, and were really larks—and so it goes on, in that never-ending change-about, called classification. If the pipits are not larks, why, first, do they fly like them, and then, again, why do they sing like them? There is a certain resemblance of tone, even in the poor, weak notes of the meadow-pipit, and no one can listen to the rich and beautiful melody of the tree-pipit, as it descends to earth, in a very lark-like manner, singing all the time, without recognising its affinity with that of the skylark, to which—in Germany, at any rate—it is hardly inferior. Is song, then, so superficial? To me it seems a very important consideration in settling a bird's family relationship. How strange it would be to find a dove, duck, crow, gull, eagle, parrot, &c., whose voice did not, to some extent, remind one of the group to which it belonged! Is there anything more distinctive amongst ourselves? The members of a family will often more resemble one another in the tone of their voice than in any other particular, even though there may be a strong family likeness, as well. Structure is *quelque chose*, no doubt; especially as, dissection not being a popular pastime, one has to submit to any statement that one reads, till the professor on whose authority it rests is contradicted by some other professor—as, in due time, he will be, but, meanwhile, one has to wait. Classification, however, should take account of everything, and, for my part, having heard the tree-pipit sing, and seen both it and the titlark fly, I mistrust any system which declares such birds to be wagtails and not larks.

I think our caution in accepting merely adaptive resemblances as tests of relationship may be pushed a little too far. A bat flies in the same general way as a bird, but we do not find it practising little tricks and ways—with an intimate style of flight, so to speak—resembling that of some particular group of birds. All men walk; yet a man, by his walk, may proclaim the family to which he belongs. A thousand points of similarity may meet to make any such resemblance, but it is not likely that they should unless they were founded on a similarity of structure. Surely, too, the resemblances of notes and tones must rest upon corresponding ones in the vocal organs, though these may be too minute to be made out. To some extent, indeed, these principles may be applied to get the titlarks into either family. It is a question of balance. That there is something in common between them and the wagtails I do not deny, and the fact that when the two meet on the Icklingham steppes neither seems to know the other, proves nothing in regard to the nearness or otherwise of the relationship.

The male of the pied- or water-wagtail may often be seen courting the female here, and a pretty sight it is to see. He ruffles out his feathers so that his breast looks like a little ball, and runs to her in a warm, possession-taking way, with his wings drooped, and his tail expanded and sweeping the ground. She, quite unmoved, makes a little peck at him, as though saying, "Be off with you!" whereat he, obeying, runs briskly off, but turning when hardly more than a foot away, comes down upon her, again,

even more warmly than before. She may relent, then, or she may not, but, at this point, another male generally interferes, when all three fly away together. There is a good deal of similarity between the courtship of the wagtail and that of the pheasant, for, having run up to the hen, the little bird, if not too brusquely repulsed, will run about her in a semicircle, drooping his wing upon that side, more especially, which is turned towards her, so as to show all that she can see—and this I have seen the pheasant do, time after time, with the greatest deliberation.

Having noticed this method in the wagtail, I have looked for it in the wheat-ear, also—the two may often be studied together—but I have not yet seen him act in quite the same way. His chief efforts, no doubt, are those aerial ones of which I have spoken, but having exhausted these, or after sitting for some time on the top twig of an elder, singing quite a pretty little song, he will often pursue the object of his adoration over the sunny sand, with ruffled plumage, and head held down. He is reduced to it, I suppose, but it seems quite absurd that he should be. He *ought* to be irresistible, dressed as he is, for what more can be wanted? Nothing can be purer, or more delicately picked out, than his colouring—his back cream-grey, his breast greyey-cream. Divided by the broad, black band of the wings, these tintings would fain meet upon the neck and chin, but, here, a lovely little chestnut sea, which neither can o'erpass, still keeps them apart. They cannot cross it, to mingle warmly with each other and make, perhaps, a richer hue. *Fas obstat*—but fate, in chestnut, is so soft and pretty

that neither of them seems to mind. Then there are pencilled lines of black and chastened white upon the face, a softening into white upon the chin, and a dab of pure white above the tail—but this you only see in flight. The tail itself seems black when it disports itself staidly, for it is the black tip, then, beyond the black of the wings, that you see. Marry, when it flirteth itself into the air, as it doth full oft, then it showeth itself white, cloaked in a chestnut. The pert little bill and affirmative legs are black. This is how I catch the bird, running over the warrens, it is not from a specimen on a table; not so exact, therefore, and yet, perhaps, more so—"lesser than Macbeth, yet greater." Truly these wheat-ears, at 7 o'clock in the morning, with the sun shining, are splendid—which is what General Buller said his men were—but I prefer their uniform to khaki; I am not sure, however, whether I prefer it to that of the stone-chat, which, though less salient, is superior in warmth and richness. Both these handsome little birds sometimes flash about together in sandy spaces over the moorlands, or may even be seen perched on the same solitary hawthorn or elder. Then is the time to compare their styles, and not to know which to like best.

The stone-chat, by virtue of his little, harsh, twittering "char," which, as long as you are near him, never leaves off, seems always to be an angry bird. With this assumed state of his mind, his motions, when he chars like this, seem exactly to correspond. There is something in his quick little flights about, from one heather-tuft to another, in the way he leaves and the way he comes down upon them, in

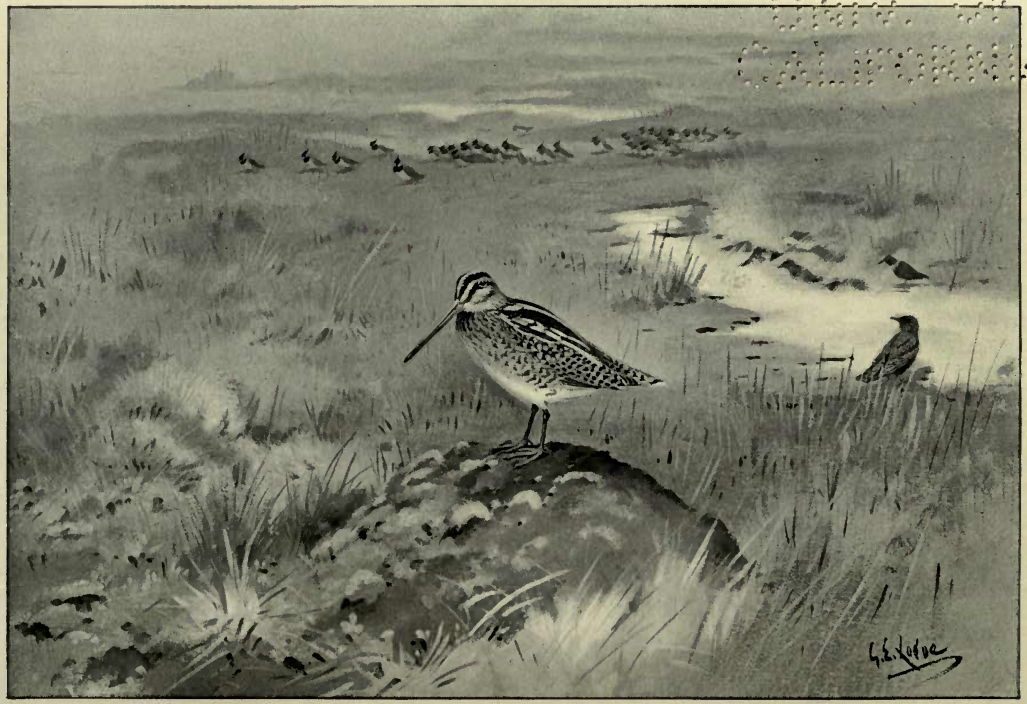
the little impatient flutter of the wings, and bold assertive flirt of the tail, supported—in spite of a constant threat of overbalancing—by a firm attitude, that suggests a fiery temper. You get this, more especially, through the tail. It is flirted *at you*, that tail. You feel that, and, also, that the intention, if questioned, would be avouched, that were you to say to the bird, sternly and firmly—in the manner of Abraham accosting Samson—"Do you flirt your tail at me, sir?" the answer, instead of a pitiful, shuffling evasion—a half-hearted quibble—would be an uncompromising, "I do flirt my tail at you, sir." One cannot doubt this—at least I cannot. So sure, in fact, have I always felt about it, that I have never yet asked the question. Why should I—*knowing* what the answer would be? But though this seems to be the stone-chat's mental attitude, when bob and flirt and flutter are as the gesticulations accompanying hot utterance—the impatient "char, char, charring"—yet, when this last is wanting—which is when he doesn't see you—all seems changed, and such motions, set in silence, assume a softened character. Now, instead of to the harsh chatter, it is to the soft purity of the bird's colouring that they seem to respond.

Of all the birds that we have here, the peewits, for a great part of the year, give most life to the barren lands. In the winter, as I say, they disappear entirely, going off to the fens, though, here and there, their voice remains, mimicked, to the life, by a starling. In February, however, they return, and are soon sporting, and throwing their fantastic somersaults, over their old, loved breeding-grounds.

Pleasant it is to have this breezy joy of spring-time, once again, to have the accustomed tilts and turns and falls and rushing sweeps, before one's eyes, and the old calls and cries in one's ears—the sound of the wings, too, free as the wild air they beat, and sunlight glints on green and white, and silver-flying snowflakes. "What a piece of work is a *peewit!*" The glossy green of the upper surface—smooth and shining as the shards of a beetle—glows, in places, with purple burnishings, and, especially, on each shoulder there is an intensified patch, the last bright twin-touch of adornment. The pure, shining white of the neck and ventral surface—shining almost into silver as it catches the sun—is boldly and beautifully contrasted with the black of the throat, chin, and forehead. The neat little, corally stilt-legs are an elegant support for so much beauty, and the crest that crowns it is as the fringe to the scarf, or the tassel to the fez. There is, besides, the walk, pose, poise, and easy swing of the whole body.

On the sopped meadow-land, near the river, in "February fill-dyke" weather, it is pleasant to see peewits bathing, which they do with mannerisms of their own. Standing upright in a little pool, one of them bobs down, into it, several times, each time scooping up the water with his head, and letting it run down over his neck and back. This is common; but he keeps his wings all the time pressed to his sides, so that they do not assist in scattering the water all over him, after the manner in which birds, when they wash, usually do. Nor does he sink upon his breast—which is also usual—but merely stoops, and rises bolt upright, again, every

time. Having tubbed in this clean, precise, military fashion, he steps an inch or so to one side, and then jumps into the air, giving his wings, as he goes up, a vigorous flapping, or waving rather, for they move like two broad banners. He descends—the motion of the wings having hardly carried him beyond the original impulse of the spring—jumps up in the same way, again, and does this some three or four times, after which he moves a little farther off, and preens himself with great satisfaction. Either this is a very original method of washing, on the part of peewits in general, or this particular peewit is a very original bird. Apparently the latter is the explanation, for now two other ones bathe, couched on their breasts in the ordinary manner. Still the wings are not extended to any great degree, and play a less part in the washing process than is usual. Both these birds, too, having washed, which takes a very little while, make the little spring into the air, whilst, at the same time, shaking or waving their wings above their backs, in the way that the other did, though not quite so briskly, so that it has a still more graceful appearance. It is common for birds to give their wings a good shake after a bathe, but, as a rule, they stand firm on the ground, and this pretty aerial way of doing things is something of a novelty, and most pleasing. It is like the graceful waving of the hands in the air, by which the Normans—as Scott tells us—having had recourse to the finger-bowl, at table, suffered the moisture to exhale, instead of drying them, clumsily, on a towel, as did the inelegant Saxons. The peewit, it is easy to see, is of gentle Norman blood.



A STATUESQUE FIGURE

p. 119. *Snipe, with Starlings Bathing, and Peewits*

Towards evening, a flock of starlings come down amongst the peewits, and some of them bathe, too, in one of the little dykes that run across the marshlands. There is a constant spraying of water into the air, which, sparkling in the sun's slanting rays, makes quite a pretty sight. On the edge of the dyke, with the *jets d'eaux* all about him, a snipe stands sunning himself, on a huge molehill of black alluvial earth. He stands perfectly still for a very long time, then scratches his chin very deftly with one foot, and stands again. Were I an artist I would sketch this scene—this solitary statuesque snipe, on his great black molehill, against the silver fountains rising from the dark dyke; beyond, through the water-drops, peewits and starlings, busy or resting, all in the setting sun—"*im Abendsonnenschein.*" The starlings are constantly moving, and often fly from one part of the land to another. With the peewits it is different. They do not move about, to nearly the same extent. To watch and wait seems to be their principle, and when they do move, it is but a few steps forward, and then stationary again. It appears as if they waited for worms to approach the surface of the ground, for, sometimes, they will suddenly dart forward from where they have long stood, pitching right upon their breasts, securing a worm, and pulling it out as does a thrush—herons, by the way, will often go down like this, in the act of spearing a fish—or they will advance a few steps and do the same, as though their eye commanded a certain space, in which they were content to wait.

Starlings, as I have often noticed, seem to enjoy

the company of peewits. They feed with them merely for their company, as I believe, and, when they fly off, will often go, too. They think them "good form," I fancy; but the peewits do not patronise. They are indifferent, or seem to be so. They may, however, have a complacent feeling in being thus followed, and, as it were, fussed about, which does not show itself in any action. I have seen, a little after sunrise, a flock of some forty or fifty peewits go up from the marshlands, and, with them, a single starling, which flew from one part of the flock to another, making, or appearing to make, little dives at particular birds. After a minute or so, it flew back to the place it had left, and where other starlings were feeding. One of these flew to meet it, and joining it, almost midway, made delighted swoops about it, sheering off and again approaching, and so, as it were, brought it back. Now, here, the general body of the starlings remained feeding when the peewits went up. One, only, went with them, and this one must have felt something which we may assume the others to have felt also, though they resisted. What was this feeling of the starling towards the peewits? Was it sympathy—a part joyous, part fussy participation in their affairs—or something less definable; or, again, was the attraction physical merely, having to do, perhaps, with the scent of the latter birds. Something there must have been, and in such obscure causes we, perhaps, see the origin of some of those cases of commensalism in the animal world, where a mutual benefit is, now, given and received. The subject seems to me to be an interesting one, and I think it

might gradually add to our knowledge and enlarge the range of our ideas, were naturalists always to note down any instance of one species seeming to like the society of another, where a reason for the preference was not discernible. How interesting, too, to see this glad welcoming back of one speck in the air, by another!—for that was the construction I placed upon it. Was there individual recognition here? Were the two birds mated? If this were so, then—as it was September at the time—starlings must mate for life, as most birds do, I believe. In this case, the vast flocks, in which they fly, to roost, through the winter, are only a mantle that masks more intimate relations, and so it may be with other birds.

This I know, that starlings have hearts even in winter. Sitting, in January, amidst the branches of a gnarled old walnut tree that tops a sandy knoll overlooking the marshes, I have often seen them wave their wings in an emotional manner, whilst uttering, at the same time, their half-singing, all-feeling notes. They do this, especially, on the long, whistling "whew"—the most lover-like part—and as the wings are waved, they are, also, drooped, which gives to the bird's whole bearing a sort of languish. The same emotional state which inspires the note, must inspire, also, its accompaniment, and one can judge of the one by the other. Though of a different build—not nearly so "massive"—these starlings might say, with Lady Jane, "I despair droopingly." But no, there is no despair, and no reason for it. One of them, now, enters a hole in the hollow branch where he has been sitting, thus showing, still more plainly,

the class of feelings by which he is dominated. But how spring-in-winteryfied is all this!—

> "And on old Hiem's thin and icy crown
> An odorous chaplet of sweet summer buds
> Is, as in mockery, set."

And then, all at once, from the midst of the walnut tree, comes the cry of a peewit, rendered to the life by one of these birds. There are no peewits near, nor, though the wide waste around is their very own, have they been seen there for months. The fenlands have long claimed them, and the fenlands are seven miles distant. Most strange—and pleasing strange—it is, to hear their absolute note, when they are all departed. I have sat and heard a particular starling, on which my eyes were fixed, thus mimic the unmistakable cry of the peewit, eight or nine times in succession. It was the spring note, so that, this being in January, also, it would have been still more remarkable had the peewit itself uttered it.

Over the more barren parts of the Sahara, here, and even where some thin and scanty-growing wheat crops struggle with the sandy soil, the great plovers, or stone-curlews, may often be seen feeding, cheek by jowl, with the peewits. Scattered amongst them both, are, generally, some pheasants, partridges, fieldfares, thrushes, and mistle-thrushes, and all these birds are apt, upon occasions, to come into collision with one another—or, rather, the stone-curlews and mistle-thrushes, being the most bellicose amongst them, are apt to fall out between themselves, or with the rest. For the stone-curlew,

he is, certainly, a fighter. A cock pheasant that approaches too near to one is attacked, and put to flight by it. The rush of this bird along the ground, with neck outstretched, legs bent, and crouching gait—a sort of stealthy speed—is a formidable affair, and seems half to frighten and half to perplex the pheasant. But what a difference to when rival male stone-curlews advance against each other to the attack! Then the carriage is upright—grotesquely so, almost—and the tail fanned out like a scallop-shell, which, now, it is not. This is interesting, I think, for in attacking birds of another species there would not be so much, if any, idea of rivalry, calling up, by association, other sexual feelings, with their appropriate actions. The combats of rival male birds seem, often, encumbered, rather than anything else, by posturings and attitudinisings, which do not add to the kind of efficiency now wanted, but, on the other hand, show the bird off to the best advantage—*e.g.* the beautiful spread of the tail, and the bow, as with the stock-dove, where both are combined and make a marked feature of the fiercest fights. All these, in my view, are, properly, displays to the female, which have been imported, by association of ideas, into the combats of the birds practising them. But in this attack on the pheasant there is nothing of all this, and the action seems, at once, less showy and more pertinent. After routing the pheasant, this same stone-curlew runs *à plusieurs reprises* at some mistle-thrushes, who, each time, fly away, and come down a little farther on. *En revanche* a mistle-thrush attacks a peewit, actually putting it to flight. It then advances three or four

times—but evidently nervous, and making a half retreat, each time—upon a stone-curlew, who, in its turn, is half frightened and half surprised. Another one comes up, as though to support his friend, so that the last dash of the mistle-thrush is at the two, after which he retreats with much honour. As he does so, both the stone-curlews posturise, drawing themselves up, gauntly, to their full height—an attitude of haughty reserve—then curving their necks downwards, to a certain point, at which they stand still and slowly relax. There is no proper sequence or proportion in all this. A stone-curlew chases a mistle-thrush, a mistle-thrush a peewit, and then the stone-curlew himself is half intimidated by the mistle-thrush that he chased. Yet, just before, he routed a pheasant, whilst the other day he ran away from a partridge. "Will you ha' the truth on't?" It depends on which is most the angry bird, has most some right infringed, some wrong done, or imagined done to him. He, for that moment, is the prevailing party, and the others give him way.

The stone-curlew is an especial feature of the country hereabout — indeed its most distinctive one, ornithologically speaking. It begins to arrive in April and stays till October, by the end of which month it has, usually, left us, all but a few stragglers which I have, sometimes, seen flying high in February —how sadly their cry has fallen, then, and yet how welcome it was! I am always glad when the voice of these birds begins to be heard, again, over the warrens. One can never tire of it—at least, I never can. With Jacques I say, always, "More, more, I prythee, more," and I can suck its melancholy—for

it is a sad note enough—"as a weasel does eggs." There are several variants of the cry, which seems to differ according to the circumstances under which it is uttered. The "dew-leep, dew-leep"—thin, shrill, and with a plaintive wail in it—comes oftenest from a bird standing by itself, and it is astonishing for what a length of time he will utter it, unencouraged by any response. He does not embellish the remark with any appropriate action or gesture, but just stands, or sits, and makes it. That is enough for him. "It is his duty and he will." But the full cry, or *clamour*, as it is called, proceeds, usually, from several birds together, as they come down over the warrens. That is a beautiful thing to hear—so wild and striking—and the spread solitudes amidst which it is uttered seem always to live in it. I have seen two birds running, and thus lifting up their voices, almost abreast, with another one either just in front of or just behind them, the three looking, for all the world, like three trumpeters on the field of battle—for they carry their heads well raised, and have a wild look of martial devotion. But it is more the wailing sounds of the bagpipes than the blast of the trumpet.

"Pibroch of Donuil Dhu,
Pibroch of Donuil,
Wake thy wild voice anew,
Summon Clan-Conuil."

And the wails grow and swell from one group to another, and all come running down as though it were the gathering of the clans.

Then there is a note like "tur-li-vee, tur-li-vee, tur-li-vee," quickly repeated — sometimes very

quickly, when it sounds more like "ker-vic, ker-vic, ker-vic"—and for such a length of time that it seems as though it would never leave off. All these notes, though differing, have the same general quality of sound, the same complaining wail in them, but one there is which is altogether different, and which I have only heard in the autumn, when the birds were flying in numbers, preparatory to migration. Though plaintive, it has not that drear character of the others; a whistling note it is, with a tremulous rise and fall in it—"tir-whi-whi-whi-whi-whi"—very pleasant to hear, and bringing the sea and sea-shore to one's memory. It bears a resemblance—a striking one, it has sometimes seemed to me—to the long, piping cry of the oyster-catcher, but is very much softer. I have heard this note uttered by a bird that a hawk was closely pursuing, but also on other occasions, so that it is not, specially, a cry of distress. The hawk in question, as I remember, was a sparrow-hawk, and therefore not as big as the stone-curlew. The two were close together when I first saw them—almost touching, in fact—the hawk spread like a fan over the stone-curlew, following every deviation of its flight—upwards, downwards, to one or another side—sometimes falling a little behind, but not as much as to leave a space—the two were always overlapping. I can hardly say why—perhaps it was the easy, parachute-like flight of the hawk, with nothing like a swoop or pounce, and the bright, clear sunshine diffusing a joy over everything—but somehow the whole thing did not impress me as being in earnest, but, rather, as a sport or play—on the part of the

hawk more particularly; and, strange as this theory may appear, it is, perhaps, somewhat in support of it, that, a few mornings afterwards, I saw a kestrel, first flying with a flock of peewits, and then with one alone. I could not detect any fear of the hawk in the peewits, and it is difficult to suppose—knowing the kestrel's habits—that he seriously meditated an attack on one of them. In the same way—or what seemed to be the same way—I have seen a hooded crow flying with peewits,[1] and a wood-pigeon with starlings: to the latter case I have already alluded. The stone-curlew in the above instance, though separated, for a time, by the hawk, as I suppose, was one of a great flock, amounting, in all, to nearly three hundred, which used to fly up every morning over the moor, where I have often waited to see them. Lying pressed amidst heather and bracken, I once had the band fly right over me, at but a few feet above the ground, so that, when I looked up, I seemed to raise my head into a cloud of birds. A charming and indescribable sensation it was, to be thus suddenly surrounded by these free, fluttering creatures. They were all about me—and so near. The delicate "whish, whish" of their wings was in my ears, and in my spirit too. I seemed in flight myself, and felt how free and how glorious bird life must be.

Almost as interesting is it to see the stone-curlews fly back to their gathering-grounds, in the very early mornings, after feeding over the country, during the night. They come either singly or in twos and threes—grey, wavering shadows on the first grey of the dawn. Sometimes there will be

[1] "Bird Watching," p. 28.

a wail from a flying bird, and sometimes the sharper ground-note comes thrilling out of the darkness—from which I judge that some run home—but silence is the rule. By the very earliest twilight of the morning, when the moon, if visible, is yet luminous, and the stars shining brightly, the *Heimkehr* is over, and now, till the evening, the birds will be gathered together on their various assembly-grounds. With the evening come the dances, which I have elsewhere described,[1] and then off they fly, again, to feed, not now in silence, but with wail on wail as they go. Such, at least as far as I have been able to observe, are the autumn habits of these birds. In the spring they are far more active during the daytime. Di-nocturnal I would call the stone-curlew—that is to say, equally at home, as occasion serves, either by day or night. Nothing is pleasanter than to see them running over the sand, with their little, precise, stilty steps. Sometimes one will crouch flat down, with its head stretched straight in front of it, and then one has the Sahara—a desert scene. This habit, however, does not appear to me to be so common in the grown bird—in the young one, no doubt, it is much more strongly developed.

The migration of the stone-curlew begins early in October, but it is not till the end of that month that all the birds are gone. About half or two-thirds of the flock go first, in my experience, and are followed by other battalions, at intervals of a few days. A few stay on late into the month, but every day there are less, and with October, as a rule, all are gone.

[1] "Bird Watching," pp. 9–15.

A "MURMURATION" OF STARLINGS

CHAPTER VI

STARLINGS are not birds to make part of an *olla podrida* merely—as in my last chapter—so I shall devote this one to them, more or less entirely. I will begin with a defence of the bird, in regard to his relations with the green woodpecker. Not, indeed, that he can be acquitted on the main charge brought against him, viz. that he appropriates to himself the woodpecker's nest. This he certainly does do, and his conduct in so doing has aroused a good deal of indignation, not always, perhaps, of the most righteous kind. The compassionate *oologist*, more especially, who may have found only starling's eggs where he thought to find woodpecker's, cannot speak patiently on the subject. His feelings run away with him, in face of such an injustice. The woodpecker is being wronged—by the starling;

it will be exterminated—all through the starling. It makes his blood boil. To console himself he looks through his fine collection, which contains not only woodpecker's eggs—say a roomful—but woodpeckers themselves—in the fluff.[1] It is something—balm in Gilead—yet had it not been for the starling there might have been more.

Personally, I do not share in the panic, and if the green woodpecker should disappear from this island—as, indeed, it may—the starling, I am confident, will have had but little to do with it. The result, as I believe, of the present friction between the two birds, will be of a more interesting and less painful character. For say that a woodpecker be deprived of its first nest, or tunnel, it will assuredly excavate another one. Not, however, immediately: it is likely, I think, that there would be an interval of some days—perhaps a week, or longer—and, by this time, a vast number of starlings would have laid their eggs. Consequently, the dispossessed woodpecker would have a far better chance of laying and hatching out his, this second time, and a better one still, were he forced to make a third attempt. No doubt, a starling wishing to rear a second brood would be glad to misappropriate another domicile, but, as the woodpecker would be now established, either with eggs or young, it would probably—I should think, myself, certainly—be unable to do so, but would have to suit itself elsewhere. The woodpecker should, therefore, have reared its first brood some time before the starling had finished with its second, and so would have time

[1] The *nakedness* in this case rather; but I use the term conventionally.

INDIGNANT!

Starling in possession of Woodpecker's Nesting Hole

p. 131.

to lay again, if this, which I doubt, is its habit. Thus, after the first retardation in the laying of the one species, consequent upon the action of the other, the two would not be likely again to come into collision; nor would the woodpecker be seriously injured by being forced, in this way, to become a later-breeding bird. As long as there are a sufficient number of partially-decayed trees for both starlings and woodpeckers—and any hole or hollow does for the former—I can see no reason why the latter should suffer, except, indeed, in his feelings; and even if a time were to come when this were no longer the case, why should he not, like the La Plata species, still further modify his habits, even to the extent, if necessary, of laying in a rabbit burrow? Love, I feel confident, would "find out a way."

But there is another possibility. May not either the woodpecker or the starling be a cuckoo *in posse?* If one waits and watches, one may see first the one bird, and then the other, enter the hole, in each other's absence, and it is only when the woodpecker finds the starling in possession—and this, as I am inclined to think, more than once—that he desists and retires. Now, the woodpecker having made its nest, is, we may suppose, ready to lay, and, if it were to do so, it is at least possible that the starling might, in some cases, hatch the egg. True, the latter would still have his nest, or a part of it, to make, but it is of loose material—straw for the most part—and the cow-bird of America has, I believe, been sometimes brought into existence under similar circumstances. Some woodpeckers, too — evolution, it must be remembered, works largely through

exceptions—might be sufficiently persistent to lay an egg in the completed nest of the starling. In this latter case, at any rate, it seems more than likely that the original parasite would become the dupe of his ousted victim, "and thus the whirligig of time" would have "brought in his revenges."

Whether in speculating upon the various possible origins of the parasitic instinct, as exhibited in perfection by the cuckoo, this one has ever been considered, I do not know, but it does not appear to me to be in itself improbable. It is not difficult to understand a bird seizing another one's nest, first as a mere site for, and then, gradually, as its own. That the dispossessed bird should still strive to lay in its own appropriated nest, and, often, succeed in doing so, is also easy to imagine; and if this should be its only, or most usual, solution of the difficulty, it would lose, through disuse, the instinct of incubation, and become a cuckoo *malgré lui*. All feeling of property would, by this time, be gone; the parasitic instinct would be strongly developed, and that it should now be indulged, at the expense of many, or several, species instead of only one—once the robber, but whose original theft would be no longer traceable—is a sequel that one might expect. In a process like this there would have been no very abrupt or violent departure, on the part of either species—of the dupe or of the parasite—from their original habits. All would have been gradual, and naturally brought about. Therefore, as it appears to me, all might very well have taken place. Let me add to these speculations one curious fact in regard to the two birds whose inter-relations have suggested them,

which extremely close observation has enabled me to elicit. I have noticed that a woodpecker which has abandoned its hole, always lays claim to magnanimity, as the motive for such abandonment, whereas the starling as invariably attributes it to weakness. I have not yet decided which is right.

But the starling may be regarded in a nobler light than that of a parasitical appropriator, or even a mere finder of, dwellings. He is, and that to a very considerable extent, a builder of them, too. I have some reason to think that he is occasionally, so to speak, his own woodpecker, for I have seen him bringing, through an extremely rough and irregular aperture, in a quite decayed tree, one little beakful of chips after another, whilst his mate sat singing on the stump of the same branch, just above him. The chips thus brought were dropped on the ground, and had all the appearance of having been picked and pulled out of the mass of the tree. Possibly, therefore, the aperture had been made in the same way.

It is in gravel- or sand-pits, however, that the bird's greatest architectural triumphs are achieved. Starlings often form colonies here, together with sand-martins, and the holes, or, rather, caverns, which they make are so large as to excite wonder. A rabbit—nay, two—might sit in some of them; two would be a squeeze, indeed, but one would find it roomy and comfortable. The stock-dove certainly does, for she often builds in them, as she does in the burrows of rabbits, and can no more be supposed to make the one than the other. Besides, I have seen the starlings at work in their vaults, and the latter growing from day to day. But no, I am stating, or

implying, a little too much. Properly, satisfactorily at work I have not seen them, though I have tried to; I have been unfortunate in this respect. But there were the holes, and there were the starlings always in and about them, and, sometimes, hanging on the face of the sand-pit, like the sand-martins themselves. That the latter had had anything to do with these great, rounded caves, or that the starlings had merely seized on the last year's martin-holes, and enlarged them, I do not believe. That may be so in some cases, but here, as it seems to me, it would have been impossible. Sand-martins, as is well known, drive their little narrow tunnels, for an immense way, into the cliff—nine feet sometimes, it is said, but this seems rather startling. Large and roomy and cavernous as are the chambers of the starlings, yet they are not quite so penetrating, so bowelly, as this. Therefore—and this would especially apply in the earlier stages of their construction—the original martin-holes ought always to be found piercing their backward wall, if the starlings had merely widened the shaft for themselves. This, however, has not been the case in the excavations which I have seen, even when they were mere shallow alcoves in the wall of the cliff—but just commenced, in fact. Moreover, some of these starling-burrows were several feet apart, the cliff between them being unexcavated. Sand-martins, however, drive their tunnels close together, and in a long irregular line, or series of lines, so that if, in these instances, starlings had seized upon them, there ought to have been many small holes in the interstices between the large ones. Lastly, if a

starling can do such a prodigious amount of excavation for himself, why should he be beholden to a sand-martin, or any other bird, for a beginning or any part of it? That he will, sometimes, commence at a martin's hole, just as he might at any other inequality of the surface — as where a stone has dropped out—and, so, widen a chink into a cavern, a fine, roomy apartment (as Shakespeare ennobled inferior productions, which was not plagiarism), I am not denying, nor that he might enjoy work, all the more, when combined with spoliation. But, with or without this, the starling appears to me to be an architect of considerable eminence, and, as such, not to have received any adequate recognition.

To return to these wonderful sand-caves—his own work — it seems curious, at first, considering their size, how he can get them so rounded in shape. Here there is no question of turning about, in a heap of things soft and yielding, pressing with the breast, to all sides, moulding, as it were, the materials, like clay upon the potter's wheel—the way in which most nests are made cup-shaped; but we have a large, airy, beehive-like chamber, somewhat resembling the interior of a Kaffir hut, except that the floor is not flat, but more like a reversed and shallower dome. The entrance, too, is small, compared to the size of the interior, in something like the same proportion. Here, on the outside, where the birds have clung, the sand looks scratched, as with their claws, or, sometimes, as though chiselled with their beaks; but within, the walls and rounded dome have a smooth and swept appearance, almost as if they had been rubbed with sandpaper. Sometimes

I have wondered if the starlings scoured, so to speak, or fretted the inside of their caverns, by rapidly vibrating their wings against them, so as to act like a stiff brush on the soft, friable sandstone. One of my notings, when watching in the sand-pits, was this: "A starling appears, now, at the mouth of a hole, waving his wings most vigorously. Then disappearing into it, again, he quickly returns, still waving them, and moves, so, along the face of the cliff, for there is something like a little ledge below the row of holes." This bird, indeed, waved its wings so long and so vigorously that I began to think it must have a special and peculiar fondness for so doing—that here was an exaggeration, in a single individual, of a habit common to the species, for starlings during the nesting season are great performers in this way. But if the wings were used as suggested, they would certainly, I think, be sufficiently strong, and their quill-feathers sufficiently stiff, to fret away the sand; and as their sweeps would be in curves, this would help to explain the domed and rounded shape of these bird cave-dwellings. Only, why have I not seen them doing it? Though many of the holes were unfinished—some only just begun—and though the birds were constantly in them, I could never plainly see any actual excavation being done by them, except that, sometimes, one, in a perfunctory sort of manner, would carry some nodules of sand or gravel out of a hole that seemed nearly finished; yet still they grew and grew. The thing, in fact, is something of a mystery to me.

It is easier to see how, when the chambers are completed, the starlings build their nests in them;

and, especially, the fact of their entering and plundering each other's is open and apparent. They seem to chance the rightful owner being at home, or in the near neighbourhood. There is no stealth, no guilty shame-faced approach. Boldly and joyously they fly up, and if unopposed, "so," as Falstaff says (using the little word as the Germans do now); if not, a quick wheel, a gay retreat, and a song sung at the end of it. Such happy high-handedness, careless guilt! A bird, issuing from a cave that is not his own, is flown after and pecked by another, just as he plunges into one that is. The thief soon reappears at the door of his premises, and sings, or talks, a song, and the robbed bird is, by this time, sing-talking too. Both are happy—*immer munter*—all is enjoyment. A bird, returning with plunder, finds the absent proprietor in his own home. Each scolds, each recognises that he has "received the dor"; but neither blushes, neither is one bit ashamed. Happy birdies! They fly about, sinning and not caring, persist in ill courses, and *how* they enjoy themselves! There is no trouble of conscience, no remorse. "Fair is foul, and foul is fair," with them. It is topsy-turvyland, a kind of right wrong-doing, and things go on capitally. Happy birdies! What a bore all morality seems, as one watches them. How tiresome it is to be human and high in the scale! Those who would shake off the cobwebs—who are tired of teachings and preachings and heavy-high novellings, who would see things anew, and not mattering, rubbing their eyes and forgetting their dignities, missions, destinies, virtues, and the rest of it—let them

come and watch a colony of starlings at work in a gravel-pit.

But starlings are most interesting when they flock, each night, to their accustomed roosting-place; in autumn, more especially, when their numbers are greatest. It is difficult to say, exactly, when the more commonplace instincts and emotions, which have animated the birds throughout the day, begin to pass into that strange excitement which heralds and pervades the home-flying. Comparatively early, however, in the afternoon many may be seen sitting in trees—especially orchard trees—and singing in a very full-throated manner. They are not eating the fruit; a dead and fruitless tree holds as many, in proportion to its size, as any of the other ones. Presently a compact flock comes down in an adjacent meadow, and the birds composing it are continually joined by many of the singing ones. Whilst watching them, other flocks begin to sweep by on hurrying pinions, and one notices that many of the high elm trees, into which they wheel, are already stocked with birds, whilst the air begins, gradually, to fill with a vague, babbling *susurrus*, that, blending with the stillness or with each accustomed sound, is perceived before it is heard—a felt atmosphere of song. One by one, or mingling with one another, these flocks leave the trees, and fly on towards the wood of their rest; but by that principle which impels some of any number, however great, to join any other great number, many detach themselves from the main stream of advance, and fly to the ever-increasing multitudes which still wheel, or walk, over the fields. It seems strange

that these latter should, hitherto, have resisted that general movement which has robed each tree with life, and made a music of the air; but all at once, with a whirring hurricane of wings, they rise like brown spray of the earth, and, mounting above one of the highest elms, come sweeping suddenly down upon it, in the most violent and erratic manner, whizzing and zigzagging about from side to side, as they descend, and making a loud rushing sound with the wings, which, as with rooks, who do the same thing, is only heard on such occasions. They do not stay long, and as all the flocks keep moving onwards, the immediate fields and trees are soon empty of birds. To follow their movements farther, one must proceed with all haste towards the roosting-place. About a mile's distance from it, at the tail of a little village, there is a certain meadow, emerald-green and dotted all over with unusually fine tall elms. In these, their accustomed last halting-place, the starlings, now in vast numbers, are swarming and gathering in a much more remarkable manner than has hitherto been the case. It is, always, on the top of the tree that they settle, and, the instant they do so, it becomes suddenly brown, whilst there bursts from it, as though from some great natural musical box, a mighty volume of sound that is like the plash of waters mingled with a sharper, steelier note—the dropping of innumerable needles on a marble floor. On a sudden the sing-song ceases, and there is a great roar of wings, as the entire host swarm out from the tree, make a wheel or half-wheel or two, close about it, and then, as though unable to go

farther, seem drawn back into it, again, by some strong, attractive force. Or they will fly from one tree to another of a group, swarming into each, and presenting, as they cluster in myriads about it, before settling, more the appearance of a vast swarm of bees, or some other insects, than of birds. These flights out from the trees, always very sudden, seem, sometimes, to be absolutely instantaneous; whilst in every case it is obvious that vast numbers must move in the same twinkle of time, as though they were threaded together.

All this time, fresh bands are continuing to arrive, draining different areas of the country. From tree to field, from earth to sky, again, is flung and whirled about the brown, throbbing mantle of life and joy; nature grows glad with sound and commotion; children shout and clap their hands; old village women run to the doors of cottages to gaze and wonder—the starlings make them young. Blessed, harmless community! The men are out, no guns are there, it is like the golden age. And now it is the final flight, or, rather, the final many flights, for it is seldom—perhaps never—that all, or even nearly all, arrive together at the roosting-place. As to other great things, so to this daily miracle there are small beginnings; the wonder of it grows and grows. First a few quite small bands are seen flying rapidly, yet soberly, which, as they near or pass over the silent wood—their pleasant dormitory—sweep outwards, and fly restlessly round in circles—now vast, now narrow—but of which it is ever the centre. "Then comes wandering by" one single bird—apart, cut off, by lakes of lonely air, from all

its myriad companions. Some three or four follow separately, but not widely sundered; then a dozen together, which the three or four join; then another small band, which is joined by one of those that have gone before it, itself now, probably, swollen by amalgamation. Now comes a far larger band, and this one, instead of joining, or being joined by, any other, divides, and, streaming out in two directions, follows one or other of those circling streams of restless, hurrying flight, that girdles, as with a zone of love and longing, the darksome, lonely-lying wood. A larger one, still, follows; and now, more and faster than the eye can take it in, band grows upon band, the air is heavy with the ceaseless sweep of pinions, till, glinting and gleaming, their weary wayfaring turned to swiftest arrows of triumphant flight—toil become ecstasy, prose an epic song—with rush and roar of wings, with a mighty commotion, all sweep, together, into one enormous cloud. And still they circle; now dense like a polished roof, now disseminated like the meshes of some vast all-heaven-sweeping net, now darkening, now flashing out a million rays of light, wheeling, rending, tearing, darting, crossing, and piercing one another—a madness in the sky. All is the starlings' now; they are no more birds, but a part of elemental nature, a thing affecting and controlling other things. Through them one sees the sunset; the sky must peep through their chinks. Surely all must now be come. But as the thought arises, a black portentous cloud shapes itself on the distant horizon; swiftly it comes up, gathering into its vast ocean the small streams and driblets of flight; it approaches the mighty host

and is the mightier—devours, absorbs it—and, sailing grandly on, the vast accumulated multitude seems now to make the very air, and be, itself, the sky.

As a rule, this great concourse separates, again, into two main, and various smaller bodies, and it is now, and more especially amongst the latter, that one may witness those beautiful and varied evolutions which are, equally, a charm to the eye and a puzzle to the mind. Each band, as it circles rapidly round, permeated with a fire of excitement and glad alacrity, assumes diverse shapes, becoming, with the quickness of light, a balloon, an oil-flask, a long, narrow, myriad-winged serpent, rapidly thridding the air, a comet with tail streaked suddenly out, or a huge scarf, flung about the sky in folds and shimmers. A mass of flying birds must, indeed, assume some shape, though it is only on these occasions that one sees such shapes as these. More evidential, not only of simultaneous, but, also, of similar motion throughout a vast body, are those striking colour changes that are often witnessed.[1] For instance, a great flock of flying birds will be, collectively, of the usual dark-brown shade. In one instant—as quickly as Sirius twinkles from green to red, or red to gold—it has become a light grey. Another instant, and it is, again, brown, and this whilst the rapidly-moving host seems to occupy the same space in the air, so lightning-quick have been the two flashes of colour and motion—for both may be visible—through the living medium; as though one had said, "One, two," or blinked the eyes twice. Yet in the sky all is a constant quantity;

[1] Or might be, if any one cared to witness them. Nobody does.

the sinking sun has neither rushed in nor out, on all the wide landscape round no change of light and shade has fallen, and other bands of moving birds maintain their uniform hue. Obviously the effect has been due to a sudden change of angle in each bird's body, in regard to the light—as when one rustles a shot-silk dress—and this change has shot, in the same second of time, through myriads of bodies. Sometimes the light of the sky will show, suddenly, like so many windows, through a multitude of spaces, which seem to be at a set and regular distance from one another; and then, again, be as suddenly not seen, the whole mass becoming opaque to the eye, as before. Here, again, the effect, which is beautiful, can only be produced by a certain number of the birds just giving their wings a slant, or otherwise shifting their posture in the air, all at the same instant of time. This, at least, is the only way in which I can explain it.

What the nature of the psychology is, that directs such movements, that allows of such a multitudinous oneness, must be left to the future to decide; but to me it appears to offer as good evidence for some form of thought-transference—containing, moreover, new points of interest—as does much that has been collected by the Psychical Research Society, which, in its investigations, seems resolved to treat the universe as though man only existed in it. This is a great error, in my opinion, for even if greater facilities for investigation are offered by one species than by any other, yet the general conclusions founded on these are almost certain to be false, if the comparative element is excluded. How could we have

acquired true views in regard to the nature and meaning—the philosophy—of any structure in our human anatomy, through human anatomy alone? How should we know that certain muscles, found in a minority of men, were due to reversion, if we did not know that these same muscles were normally present in apes or other animals?[1] Exactly the same principle applies to the study of psychology, or what is called psychical research: and it is impossible not to get exaggerated, and, as one may say, misproud ideas of our mental attributes, and consequently of ourselves, if we do not pay proper attention to the equivalents, or representatives, of these in our blood relations, the beasts.

In fact, if we study man, either mentally or physically, as one species amongst many, we have a science. If we study him only, or inordinately, we very soon have a religion. The Psychical Research Society appears to me to be going this way. Its leading members are becoming more and more impressed by certain latent abnormal faculties in the human subject, but they will not consider the nature and origin of such faculties, in connection with many equally mysterious ones scattered throughout the animal kingdom, or pay proper attention to these. The wonder of man, therefore, is unchecked by the wonder of anything else: no monkey, bat, bird, lizard, or insect pulls him up short: he sees himself, only, and through Raphaels and Virgils and genius and trances and ecstasies—soon sees himself God, or approaching, at least, to that size. So an image is put up in a temple, and joss-sticks lighted before

[1] "The Descent of Man," pp. 41, 42.

it. Service is held. There are solemn strains, reverential attitudes, and "Out of the deeps," and "Cometh from afars," go up, like hymns, from the lips of officiating High Priests—the successive Presidents of the Society. It is church, in fact, with man and religion inside it. Outside are the animals and science. In such an atmosphere field natural history does not flourish. You may not bring dogs into church. That, however, is what I would do, and it is just what the Society ought to do. With man for their sole theme they will never, it seems likely, get beyond a solemn sort of mystic optimism. If they want to get farther they should let the dogs into church.

Whilst starlings are thus flying to the roosting-place, they often utter a peculiar, or, at any rate, a very distinctive note, which I have never heard them do, upon any other occasion, except in the morning, on leaving it. It is low, of a musical quality, and has in it a rapid rise and fall—an undulatory sound one might call it, somewhat resembling that note I have mentioned of the great plover, which, curiously enough, is also uttered when the birds fly together in flocks. But whilst there is no mistaking the last, this note of the starlings is of a very elusory nature, and I have often been puzzled to decide whether it was, indeed, vocal or only caused by the wings. Sometimes there seems no doubt that the former is the case, but on other occasions it is more difficult to decide. I think, however, that it is a genuine cry, and, as I say, I have only heard it upon these occasions, nor have I ever heard or read any reference to it. It is usually stated that starlings

fly, together, in silence, but besides the special note I have mentioned, and which is totally unlike any of their other ones, they often make a more ordinary twittering noise. It is not loud, and does not seem to be uttered by any large proportion of the birds, at once. Still, their numbers being so great, the volume of sound is often considerable; and no one could watch starlings going to roost, for long, without hearing it. Those, therefore, who say that they always fly in silence cannot have watched them for long.

The final end and aim of all the gatherings, flights, circlings, and "skiey" evolutions generally, which are gone through by starlings, at the close of each day, is, of course, the entry into that dark wood where, in "numbers numberless," yet packed into a wonderfully small space, they pass the night, clinging beneath every leaf, like those dreams that Virgil speaks of. This entry they accomplish in various ways. Sometimes, but rarely, they descend out of the brown firmament of their numbers, in one perpetual rushing stream, which seems to be sucked down by a reversed application of the principle on which the column of a waterspout is sucked up from the ocean. More often, however, they fly in, in detachments; or again, they will swarm into one of the neighbouring hedges, forming, perhaps, the mutual boundary of wood and meadow, and, commencing at the remote end, move along it, flying and fluttering, like an uproarious river of violent life and joy, the wood at last receiving them. But should there be another thicket or plantation, a field or so from their chosen dormitory, it is quite their general habit to enter this, first, and fly from it to the latter.

The passage from the one to the other is an interesting thing to see, but it does not take place till after a considerable interval, during which the birds talk, and seem to be preparing themselves for going to bed. At last they are ready, or the proper time has come. The sun has sunk, and evening, in its stillness, seems to wait for night. The babbling sing-song, though swollen, now, to its greatest volume, seems—such are the harmonies of nature—to have more of silence in it than of sound, but, all at once, it changes to a sudden roar of wings, as the birds whirl up and fly across the intervening space, to their final resting-place. It seems, then, as though all had risen, at one and the same moment, but, had they done so, the plantation would now be empty, and the entire sky, above it, darkened by an immense host of birds. Such, however, is not the case. There is, indeed, a continuous streaming out, but, all or most of the while that it is flowing, the plantation from which it issues must be stocked with still vaster numbers, since it takes, as a rule, about half-an-hour for it to become empty. It is drained, in fact, as a broad sheet of water would be, by a constant, narrower outflow, taking the water to represent the birds.

Thus, though the exodus commences with suddenness, it is gradually accomplished, and this gives the idea of method and sequence, in its accomplishment. The mere fact that a proportion of the birds resist, even up to the last moment, the impulse to flight, which so many rushing pinions, but just above their heads, may be supposed to communicate, suggests some reason for such self-restraint, and

gradually, as one watches—especially if one comes night after night—the reason begins to appear. For a long time the current of flight flows on, uninterruptedly, hiding with its mantle whatever of form or substance may lie beneath. But, at last, the numbers begin to wane, the speed—at least in appearance—to flag, and it is then seen that the starlings are flying in bands, of comparatively moderate size, which follow one another at longer or shorter intervals. Sometimes there is a clear gap between band and band, sometimes the leaders of the one are but barely separated from the laggards of the other, sometimes they overlap, but, even here, the band formation is plain and unmistakable. This, as I have said, is towards the end of the flight. On most occasions, nothing of the sort is to be seen at its beginning. There is a sudden outrush, and no division in the continuous line is perceptible. Occasionally, however, the exodus begins in much the same way as it ends, one troop of birds following another, until soon there ceases to be any interval between them. But though the governing principle is now masked to the eye, one may suppose that it still exists, and that as there are unseen currents in the ocean, so this great and, apparently, uniform stream of birds, is made up of innumerable small bands or regiments, which, though distinct, and capable, at any moment, of acting independently, are so mingled together that they present the appearance of an indiscriminate host, moving without order, and constructed upon no more complex principle of subdivision than that of the individual unit. There is another phenomenon, to be observed in

these last flights of the starlings, which appears to me to offer additional evidence of this being the case. Supposing there to be a hedge, or any other shelter, in the bird's course, one can, by stooping behind it, remain concealed or unthought of, whilst they pass directly overhead. One then notices that there is a constant and, to some extent, regular rising and sinking of the rushing noise made by their wings. It is like rush after rush, a maximum roar of sound, quickly diminishing, then another roar, and so on, in unvarying or but little varying succession. Why should this be? That, at more or less regular intervals, those birds which happened to be passing just above one, should fly faster, thereby increasing the sound made by their wings, and that this should continue during the whole flight, does not seem likely. It would be method without meaning. But supposing that, at certain points, the living stream were composed of greater multitudes of birds than in the intermediate spaces, then, at intervals, as these greater multitudes passed above one, there would be an accentuation of the uniform rushing sound. Now in a moderate-sized band of starlings, flying rapidly, there is often a thin forward, or apex, end, which increases gradually, or, sometimes, rather suddenly, to the maximum bulk in the centre, and a hinder or tail end, decreasing in the same manner. If hundreds of these bands were to fly up so quickly, one after another, that their vanguards and rearguards became intermingled, yet, still, the numbers of each main body ought largely to preponderate over those of the combined portions, so that here we should have a cause

capable of producing the effect in question. The starlings then—this, at least, is my own conclusion—though they seem to fly all together, in one long string, really do so in regiment after regiment, and, moreover, there is a certain order—and that a strange one—by which these regiments leave the plantation. It is not the first ones—those, that is to say, that are stationed nearest the dormitory—that lead the flight out to it, but the farthest or back regiments, rise first, and fly, successively, over the heads of those in front of them. Thus the plantation is emptied from the farther end, and that part of the army which was, in sitting, the rear, becomes, in flying, the van. This, at least, seems to be the rule or tendency, and precisely the same thing is observable with rooks, though in both it may be partially broken, and thus obscured. One must not, in the collective movements of birds, expect the precision and uniformity of drilled human armies. It is, rather, the blurred image, or confused approximation towards this, that is observable, and this is, perhaps, still more interesting.

One more point—and here, again, rooks and starlings closely resemble each other. It might be supposed that birds thus flying, in the dusk of evening, to their resting-place, would be anxious to get there, and that the last thing to occur to them would be to turn round and fly in the opposite direction. Both here, however, and in the flights out in the morning, we have that curious phenomenon of breaking back, which, in its more salient manifestations, at least, is a truly marvellous thing to behold. With a sudden whirr of wings, the

sound of which somewhat resembles that of a squall of wind—still more, perhaps, the crackling of sticks in a huge blaze of flame—first one great horde, and then another, tears apart, each half wheeling round, in an opposite direction, with enormous velocity, and such a general seeming of storm, stir, and excitement, as is quite indescribable. This may happen over and over again, and, each time, it strikes one as more remarkable. It is as though a tearing hurricane had struck the advancing host of birds, rent them asunder, and whirled them to right and left, with the most irresistible fury. No act of volition seems adequate to account for the thing. It is like the shock of elements, or, rather, it is a vital hurricane. Seeing it produces a strange sense of contrast, which has a strange effect upon one. It is order in disorder, the utmost perfection of the one in the very height of the other—a governed chaos. Every element of confusion is there, but there is no confusion. Having divided and whirled about in this gusty, fierce fashion, the birds, for a moment or so, seem to hang and crowd in the air, and then—the exact process of it is hardly to be gathered—they reunite, and continue to throng onwards. Sometimes, again, a certain number, flashing out of the crowd, will wheel, sharply, round in one direction, and descend, in a cloud, on the bushes they have just left. In a second or two they whirl up, and come streaming out again. In these sudden and sharply localised movements we have, perhaps, fresh evidence of that division into smaller bodies, which may, possibly, underlie all great assemblies either of starlings or other birds.

If anything lies in the way of the starlings, during this, their last flight, to the dormitory—as, say, a hedge—the whole mass of them, in perfect order and unison, will, as they pass it, increase their elevation, though why, as they were well above it before, one cannot quite say. However they do so, and the brown speeding cloud that they make, whirling aloft and flashing into various sombre lights against the darkening sky, has a fine stormy effect. It would make the name of any landscape painter, could he put on canvas the stir and spirit of these living storms and clouds that fill, each morning and evening, a vast part of the heavens with their hurrying armies, adding the poetry of life to elemental poetry, putting a heart-beat into sky and air. Were Turner alive, now, I would write to him of these wondrous sights; for, unless he despaired, surely he can never have seen them. He who gave us "Wind, steam, and speed" might, had he known, have given us a "Sky, air, and life," to hang, for ever (if the trustees would let it) on the walls of the National Gallery. But who, now, is there to write to? Who could give us not only the thing, but the spirit of the thing—the wild, fine poetry of these starling-flights? It is strange how much poetry lies in mere numbers, how they speak to the heart. What were one starling, winging its way to rest, or even a dozen or so? But all this great multitude filled with one wish, one longing, one intent—so many little hearts and wings beating all one way! It is like a cry going up from nature herself; the very air seems to yearn and pant for rest. And yet there is the precise converse of

this. The death of one child—little Paul Dombey, for instance—is affecting to read about: thousands together seem not to affect people—no, not even ladies—at all.

It is interesting to sit in the actual roosting-place of the starlings, after the birds have got there. They are all in a state of excitement, hopping and fluttering from perch to perch, from one bush to another, and always seeming to be passing on. One is in the midst of a world of birds, of a sea of sound, which is made up, on the whole, of a kind of chuckling, chattering song, in which there are mingled—giving it its most characteristic tones—long musical whews and whistles, as well as some notes that may fairly be called warblings—the whole very pleasing, even in itself; delightful, of course, as a part of all the romance. As one sits and watches, it becomes more and more evident that a disseminating process is going on. The birds are ever pushing forward, and extending themselves through the thick undergrowth, as though to find proper room for their crowded numbers. There is, in fact, a continual fluttering stream through the wood, as there has been, before, a flying stream through the air, but, in the denseness of the undergrowth, it is hard to determine if there is a similar tendency for band to follow band. The universal sing-song diminishes very slowly, very gradually, and, when it is almost quite dark, there begin to be sudden flights of small bodies of birds, through the bushes, at various points of the plantation, each rush being followed by an increase of sound. Instead of diminishing, these scurryings, with their

accompanying babel, become greater and more numerous, as the darkness increases, but whether this is a natural development, or is caused by an owl flying silently over the plantation, I am not quite sure, though I incline to the former view. Night has long fallen, before silence sinks upon that darker patch in darkness, where so many hearts, burdened with so few cares, are at rest.

Next morning, whilst it is still moonlight, there is a subdued sing-songing amongst the birds, but by crawling, first on one's hands and knees, and then flat, like a snake, one is able to get, gradually, into the very centre of their sleeping-quarters, where, sitting still, though one may create a little disturbance at first, one soon ceases to be noticed. As daylight dawns, there is some stretching of the wings, and preening, and then comes an outburst of song, which sinks, and then again rises, and so continues to fluctuate, though always rising, on the whole, until the sound becomes a very din. At length comes a first wave of motion, birds fluttering from perch to perch, and bush to bush, then a sudden roar of wings, as numbers fly out, a lull, and then a great crescendo of song, another greater roar, a still greater crescendo, and so on, roar upon roar, crescendo on crescendo, as the tide of life streams forth. The bushes where the birds went up are completely empty, but soon they fill again, and the same excited scene that preceded the last begins to re-enact itself. Birds dash from their perches, hang hovering in the air, with rapidly-vibrating wings, perch again, again fly and flutter, the numbers ever increasing, till the whole place seems to seethe.

"*Fervet opus*," as Virgil says of the bees. Greater and greater becomes the excitement, more and more deafening the noise, till, as though reaching the boiling-point, a great mass of the birds is flung off, or tears itself from the rest, and goes streaming away over the tree-tops. The pot has boiled over: that, rather than an act of volition, is what it looks like. There is a roar, thousands rise together, but the greater part remain. It is as though, from some great nature-bowl of dancing, bubbling wine, the most volatile, irrepressible particles—the very top sparkles—went whirling joyously away; or as though each successive flight out were a cloud of spray, thrown off from the same great wave. It will thus be seen that the starlings fly out of their bed-room, as they fly into it, in successive bodies, namely, and not in one cloud, all together.

In the plantation are many fair-sized young trees, but it is only now, when the birds have begun to fly, that they may be seen dashing into them. They have been empty before, standing like uninhabited islands amidst an ocean of life. When roosting, starlings seem to eschew trees that are at all larger than saplings, or whose tops project much above the level of the undergrowth. Tall, thin, flexible bushes —such as hazel or thorn—closely set together, seem to be what they demand for a sleeping-place. They sit on or near the tops of these, and it is obvious that a climbing animal, of any size—say a cat or a pole-cat—would find it difficult, or impossible, to run up them, and would be sure to sway or shake the stem, even if it succeeded. Whether this has had anything to do, through a long course of natural

selection, with the choice of such coverts, I do not know, nor, do I suppose, does anybody. It is matter of conjecture, but what I have mentioned in regard to the many small trees, scattered through the plantation, seems to me curious. How comfortably, one would think, could the birds roost in these, but, again, how easily could a cat run up them. Of course a habit of this kind, gained in relation to such possibilities as these, would have been gained ages ago, when there might have been great differences both in the numbers and species of such animals as would have constituted a nightly danger. Certain it is that starlings, during the daytime, much affect all ordinarily-growing trees. They roost, also, in reed-beds, where they would be still safer from the kind of attack supposed.

Even whilst this book is going through the press, have come the usual shoutings of the Philistines —their cries for blood and fierce instigations to slaughter. The starlings, they tell us, do harm, but what they really mean is this, that, seeing them in abundance, their fingers itch to destroy. It is ever so. These men, having no souls in their bodies, have nothing whatever to set against the smallest modicum of injury that a bird or beast (unless it be a fox or a pheasant) may do—against any of those sticks, in fact, that are so easily found to beat dogs with. In one dingle or copse of their estate a pheasant or two is disturbed. Then down with the starlings who do it, for what good are the starlings to them? *They* do not care about grand sights or picturesque effects. They would sooner shoot a pheasant nicely, to see it shut its eyes

and die in the air—a subject of rapture with them, they expatiate to women upon that—than gaze on the Niagara Falls—nay, they would sooner shoot it anyhow. Were it a collection of old masters that swept into their plantations, to flutter their darlings, they would wish to destroy them too — unless indeed they could sell them: there would be nothing to *look at.* Pheasants are their true gods. To kill them last, they would kill everything else first—dogs, men, yea women and children—but not liking, perhaps, to say so, they talk, now, about the song-birds. The starlings, forsooth, disturb them. Oh hypocrites who, for a sordid pound or two, which your pockets could well spare, would cut down the finest oak or elm that ever gladdened a whole countryside—yes, and have often done so—would you pretend to an *æsthetic* motive? This wretched false plea, with an appeal for guidance in the matter of smoking out or otherwise expelling the starlings from their sleeping-places, appeared lately in the *Daily Telegraph.* In answer to it I wrote as follows—for I wish to embody my opinion on the matter with the rest of this chapter, nor can I do so in any better way:—

"Sir,—Will you allow me to make a hasty protest—for I have little time, and write in the railway-train—against the cruel and ignorant proposition to destroy the starlings, or otherwise interfere with their sleeping arrangements, under the mistaken idea that they do harm to song-birds? I live within a few miles of a wood where a great host of these birds roost, every night. The wood is small, yet in spite of their enormous numbers,

they occupy only a very small portion of it, for they sleep closely packed—and consider the size of a starling. In that small wood are as many song-birds as it is common to find in others of similar size belonging to the district, and they are as indifferent to the starlings as the starlings are to them—or, if they feel anything as they come sailing up, it is probably a sympathetic excitement; for small birds, as I have seen and elsewhere recorded,[1] will sometimes associate themselves joyously with the flight out of rooks from their woods in the morning, and I know not why they should more fear the one than the other. That they do not care to roost amidst such crowds may be true; but what of that? Were their—the song-birds'—numbers multiplied by a thousand, there would still be plenty of room for them, even in the same small wood or plantation; and, if not, there is no lack of others. What, then, is the injury done them? It exists but in imagination. How many of those who lightly urge the smoking out of these poor birds from their dormitories (must they not sleep, then?) have seen starlings fly in to roost? Night after night I have watched them sail up, a sight of surpassing grandeur and interest—nay, of wonder too; morning after morning I have seen them burst forth from that dark spot, all joyous with their voices, in regular, successive hurricanes—a thing to make the heart of all but Philistines rejoice exceedingly. Moreover, these gatherings present us with a problem of deep interest. Who can explain those varied, ordered movements, those

[1] "Bird Watching," p. 284.

marvellous aerial manœuvrings, that, at times, absolute simultaneousness, as well as identity of motion and action amidst vast crowded masses of birds, flying thick as flakes in a snow-storm? Is there nothing to observe here, nothing to study? Are we only to disturb and destroy? Our island offers no finer, no more grand and soul-exalting sight than these nightly gatherings of the starlings to their roosting-places. Who is the barbarian that would do away with them? Why, it would take a Turner to depict what I have seen, to give those grand effects—those living clouds and storms, those skies of beating breasts and hurrying wings. Will no artist lift up his voice? Will no life-and-nature lover speak? I call upon all naturalists with souls (as Darwin says somewhere, feeling the need of a distinction), upon all who can see beauty and poetry where these exist, upon all who love birds and hate their slayers and wearers, to protest against this threatened infamy, the destruction of our starling-roosts. How should these gatherings interfere with the song-birds? The latter must be numerous indeed if some small corner of a wood—or even some small wood itself—to which all the starlings for ten or twenty miles around repair, can at all crowd them for room. Such an idea is, of course, utterly ridiculous, and in what other way can they be incommoded? In none. They do not fear the starlings. Why should they? They are not hawks, not predaceous birds, but their familiar friends and neighbours. The whole thing is a chimera, or, rather, a piece of unconscious hypocrisy, born of that thirst for blood, that itching to destroy, which, instead of

interest and appreciation, seems to fill the breasts of the great majority of people—men, and women, too, those tender exterminators—as soon as they see bird or beast in any numbers. It is so, at least, in the country. How well I know the spirit! How well I know (and hate) the kind of person in which it most resides. They would be killing, these people—so they talk of 'pests,' and 'keeping down.'"

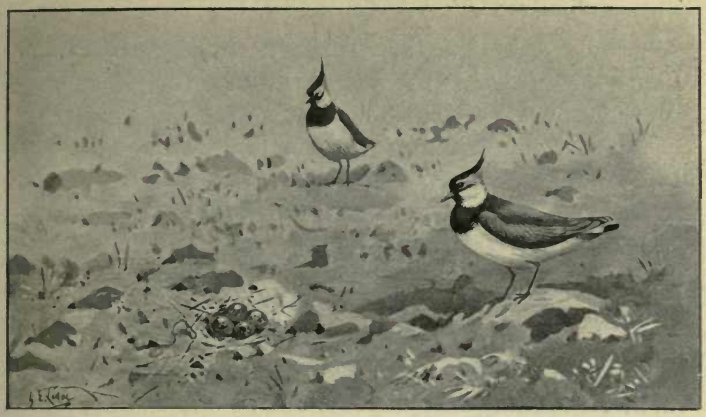
Ever since I came to live in the west of England, I have watched the starlings as opportunity presented, and I believe, of all birds, they are the greatest benefactors to the farmer, and to agriculture generally. Spread over the face of the entire country, they, all day long, search the fields for grubs, yet because, at night, they roost together in an inconsiderable space, they "infest" and are to be got rid of. As to the smallness of the space required, and the wide area of country from which the birds who sleep in it are drawn, I may refer to a letter which appeared, some time ago, in the *Standard*,[1] in which the opinions of Mr. Mellersh, author of "The Birds of Gloucestershire," are referred to. That starlings eat a certain amount of orchard fruit is true—that is a more showy performance than the constant, quiet devouring of grubs and larvæ. Such as it is, I have watched it carefully, and know how small is the amount taken, compared with the size of the orchards and the abundance of the fruit. Starlings begin to congregate some time before they fly to their roosting-place. They then crowd into trees—often high elm-trees, but often, too, into those of orchards. The non-investigating person

[1] December 8, 1904, I think, or thereabouts.

takes it for granted that they are there, all for plunder, and that all are eating—but this is a wrong idea. The greater number—full of another kind of excitement—touch nothing, and dead barkless trees may be seen as crowded as those which are loaded with fruit. Some fruit, as I say, they do destroy, and this, in actual quantity, may amount to a good deal. But let anybody see the orchards in the west of England—where starlings are most abundant—during the gathering-time, and he may judge as to the proportion of harm that the birds do. It is, in fact, infinitesimal, not worth the thinking of, a negligeable quantity. Yet in the same year that mountains of fruit are thrown away, or left ungathered, when it may rot rather than that the poor—or indeed anybody—should buy it cheap, you will hear men talk of the starlings.

Why, then, do the starlings "infest"? Why should they be persecuted? Because they sleep together, in the space of, perhaps, a quarter of an acre here and there—one sole dormitory in a large tract of country? Is that their crime? For myself I see not where the harm of this can lie, but supposing that a thimbleful does lie somewhere, that a pheasant or two—for whose accommodation the country groans—is displaced, is not the pleasure of having the birds, and their grub-collecting all day long, sufficient to outweigh it? Is there nothing to love and admire in these handsome, lively, friendly, vivacious birds? They do much good, little harm, and none of that little to song-birds. Indeed they are song-birds too, or very nearly. How pleasant are their cheery, sing-talking voices! How greatly

would we miss them—the better part of us, I mean —were they once gone! Harm to the song-birds! Why, when do these grand assemblages take place? Not till the spring is over, and our migratory warblers gone or thinking of going. They are autumn and winter sights. Are our thrushes and blackbirds alarmed, then?—or bold robin? Perish the calumny! "Infest!" No, it is not the starlings—loved of all save clods—who infest the country. It is rather, our country gentlemen. "Song-birds!" No, *they* have nothing to do with it. "Will you ha' the truth on't?" To see life, and to wish to take it, is one and the same thing with the many, so that the greater the numbers, the greater seems the need to destroy.



PEEWITS AND NEST

CHAPTER VII

PEEWITS, besides those aerial antics which are of love, or appertaining to love, have some other and very strange ones, of the same nature, which they go through with on the ground. A bird, indulging in these, presses his breast upon the ground, and uses it as a pivot upon which he sways or rolls, more or less violently, from side to side. The legs, during this process, are hardly to be seen, but must, I suppose, support the body, which is inclined sharply upwards from the breast. The wings project like two horns on either side of the tail, which is bent down between them, in a nervous, virile manner. All at once, a spasm or wave of energy seems to pass through the bird, the tail is bent, still more forcibly, down, the body and wings remaining as before; and, with some most energetic waggles of it, from side to

side, the generative act appears to be performed. That, at any rate, is what it looks like—the resemblance could hardly be more exact.

What is the meaning of this strange performance? The cock bird, say the handbooks, is displaying before the hen. But where is the hen? In nine cases out of ten she is not there; and this, and, still more, the peculiarity of the actions, have convinced me that a wish to please is not the real motive of them. Again, it is assumed that the cock bird, only, rolls in this way. But is this the case? Some further observations, as recorded by me in my field notes, may serve to answer this question. "Two peewits have just paired. I noticed no prior antics, but, immediately after coition, one of the two—I am not quick enough with the glasses to say which—runs a little way over the sand, and commences to roll. In a moment or two, the other runs up, looking most interested, and, on the first one's rising and standing aside, immediately sits along, in the exact spot where it was, and in the same sort of attitude, though without rolling. Then this bird rises also, and both stand looking at the place where they have just lain, and making little pecks at it—or just beside it—with their bills. One of the two then walks a little away, so that I lose her, whilst the other one, on which I keep the glasses, and which I now feel sure is the male, rolls, again, in the same place, and in the most marked manner. Then, rising, he runs, for some way, with very short precise little steps, which have a peculiar character about them. His whole pose and attitude is, also, peculiar. The head and beak are pointed

straight forward, in a line with the neck, which is stretched straight out, to its fullest extent, the crest lying flat down upon it. In this strange, set attitude, and with these funny little set, formal steps, he advances, without a pause, for some dozen or twenty yards, then stops, resumes his ordinary demeanour, and, shortly, flies off. In a little while the same thing occurs again, and, though still not quick enough with the glasses to be quite certain which bird it is that leads the way, immediately after the nuptial rite has been accomplished, I yet think it is the male; and he rolls now in two different places, making a run to some distance, in the way described, after the first time of doing so. It is only on the second occasion that the other bird runs up to him. The actions of the two are, then, as before, except that the last comer—the female, as I think—rolls this time, slightly, also. It is in a very imperfect and, as one may say, rudimentary manner, but I catch the characteristic, though subdued, motion with the tail.

My glass is now upon a peewit standing negligently on the warrens, when another one, entering its field, flies right down upon and pairs with this bird, without having previously alighted on the ground. Immediately afterwards he (the male) makes his funny little run forward, starting from by the side of the female, and, at the end of it, pitches forward and commences to roll. The female, shortly, comes up to him, with the same interested manner as on the other occasions, and, on his moving his length forward, and sinking down again, she sits in the spot where he has just rolled,

pecking on the ground, as before described, whilst he rolls, again, just in front of her. The two birds then rise, and stand together, making little desultory pecks. After a while the hen walks away, leaving the cock, who rolls a little more before following her. A strange performance this rolling is, when seen quite plainly through the glasses. The whole body is lifted up, so that the bird often looks not so much sitting as standing on his breast, the rest of him being in the air. The breast is, thus, pressed into the sand, whilst a rolling or side-to-side movement of it, varying in force, helps to make a cup-shaped hollow. This curious raised attitude, however, alternates with a more ordinary sitting posture, nor is the rolling motion always apparent. After each raising of the wings and tail, they are depressed, then again raised, and so on, whilst, at intervals, there is the curious waggle of the tail, before described, suggesting actual copulation.

In none of the above instances did I walk to examine the place where the birds had rolled after they had left them. They would, indeed, have been difficult to find, but upon another occasion, when the circumstances made this easy, I did so, and found just such a little round basin in the sand as the eggs are laid in. No eggs, however, were ever laid here, whilst the bird was afterwards to be seen rolling in other parts. It is easy, under such circumstances, to keep one peewit—or at least one pair of them—distinct from others, for they appropriate a little territory to themselves, which they come back to and stand about in, however much they may fly abroad. And here the birds return, in my

experience, spring-time after spring-time, to lay their eggs, so that I judge them to pair for life. It is well known that the peewit does produce hollows in the way described—as, indeed, he could hardly avoid doing—and as he is constantly rolling in various places numbers of such little empty cups are to be found about the bird's breeding haunts. Mr. Howard Saunders, in his "Manual of British Birds," says, alluding to the spring-tide activities of the peewit, "The 'false nests' often found are scraped out by the cock in turning round, when showing off to the female." I have shown what the bird's movements on these occasions really are. They have upon them, in my opinion, the plain stamp of the primary sexual impulse, and it is out of this that anything which can be looked upon as in the nature of a conscious display must have grown. There is, indeed, evidence to show that one bird performing these actions may be of interest to another, but in spite of this and of the bright colour of the under tail-coverts (which I have seen apparently examined, even touched, by one peewit, whilst another, their owner, was rolling), it may be said that, in the greater number of cases, the performing bird is paid no attention to, and does not, itself, appear to wish to be, being often, to all intents and purposes, alone. What relation, then, do such actions, which are not confined to the peewit, bear to the more pronounced and undoubted cases of sexual display? They are, I believe, the raw material out of which these latter have arisen—sometimes, at least, if not always. I have, also, shown that it is not the male peewit, only, that rolls.

As usual, it has been assumed that this is so, because here, as in other cases, it is impossible, in field observation, to distinguish the one sex from the other, and to assume is a much easier process than to find out. Immediately after coition, however, one has both the male and the female bird before one, and under these circumstances I have seen them both act in the same way, as just described. It is true that the actions of the female were less pronounced than those of the male, but it does not follow that this is always the case, and, moreover, it is of no great importance if it is. The essential fact is that both the sexes go through the same movements, and, therefore, if these movements are, as I believe them to be, the basis of sexual display, one can see why, in some cases, there might be an inter-sexual display, and, as a consequence, an inter-sexual selection. But I leave this question, which has been profoundly neglected, to come to another. In the passage I have quoted, the term "false nest" is put in inverted commas, showing, I suppose, that it has often been used, and, consequently, that the close resemblance of the false nest to the real one has been generally recognised. I suggest that the false nest *is* the real one—by which I mean that there is no essential difference in the process by which each is produced; and, further, that the origin of nest-building generally, amongst birds, has been the excited nervous actions to which the warmth of the sexual feelings give rise, and the activity of the generative organs.

My theory is based upon two assumptions, neither of which, I think, is in itself improbable. The first

of these assumptions is that birds, in early times, made no nests, and the second that the eggs were originally laid upon the ground only. Assuming this, and that these ancient birds, like many modern ones, gave themselves up, during the breeding time, to all sorts of strange, frenzied movements over the ground, I suppose the eggs to have been laid in some place which had been the scene of such movements. For, by a natural tendency, birds, like other animals, get to connect a certain act with a certain place, or with certain places. Thus they are wont to roost in the same tree, and often on the same bough of it, to bathe in the same pool or bend of the stream, &c. &c. In accordance with this disposition, their antics, or love-frenzies, would have tended to become localised also; the places where they had been most frequently indulged in would have called up, by association, the nuptial feelings, and, consequently, the eggs would have been more likely to have been laid in such places than in other ones having no special significance. Like every other act that is often repeated, this one of laying in a certain spot would have passed into a habit, and thus the place of mutual dalliance—perhaps of pairing, also—would have become the place of laying, therefore the potential nest. Having got thus far, let us now suppose that one chief form of these frenzied movements, which I suppose to have been indulged in by both sexes, was a rolling, buzzing, or spinning round upon the ground, by which means the bird so acting produced, like the peewit, a greater or lesser depression in it. If the eggs were laid in the depression so formed, they

would then have been laid in a nest, but such nest would not have been made with any idea of receiving the eggs, or sheltering the young. Its existence would have been due to excited and non-purposive movements, springing out of the violence of the sexual emotions. Now, however, comes a further stage, which, it might well be thought, could only have grown out of deliberate and intelligent action—I mean at every slight step in the process—on the part of the bird. I allude to the lining of grass, moss, sticks, or even stones or fragments of shells, with which many birds that lay their eggs in a hollow, made by them in the ground, further improve this. That the nature and object of this process is now, through memory, more or less understood by many birds, I, for one, do not doubt; but, as every evolutionist will admit, it is the beginnings of anything, which best explain, and are most fraught with significance. Is it possible that even the actual building of the nest may have had a nervous—a frenzied—origin? Lions and other fierce carnivorous animals will, when wounded, bite at sticks, or anything else lying within their reach. That a bird, as accustomed to peck as a dog or a lion is to bite, should, whilst in a state of the most intense nervous excitement, do the same, does not appear to me to be more strange, or, indeed, in any way peculiar; and that such a trick would be inherited, and, if beneficial, increased and modified, who that has Darwin in his soul can doubt? Now if a bird, whilst ecstatically rolling on the ground, were to pick up and throw aside either small sticks or any other loose-lying and

easily-seized objects—such as bits of grass or fibrous roots—I can see no reason why it should not, by stretching out its neck to such as lay just within its reach, and dropping them, again, when in an easier attitude, make a sort of collection of them close about it—of which, indeed, I will quote an instance farther on. Then if the eggs were laid where the bird had rolled, they would be laid in the midst of such a collection.

Now, I submit that these curious actions of the peewit, during the breeding time, support the theory of the origin of nest-building, which I have here roughly sketched, if not entirely, at least to a certain extent. They point in that direction. Here we have movements, on the part of both the male and female bird, which are, obviously, of a sexual character, having upon them, I would say, the plain stamp of the primary sexual instinct. They are most marked—or, at any rate, most elaborate—immediately after the actual pairing, commencing, then, in the curious little run and set attitude of the male. Out of, and as a result of, these movements, a depression in the ground, greatly resembling—if not, as I believe, identical with—that in which the eggs are laid, is evolved, and in or about this is shown a tendency to collect sticks, grass, or other loose substances. But how different are these collecting movements to those which we see in a bird whose nest-building instinct has become more highly developed! They seem to be but just emerging from the region of blind forces, to be only half-designed, not yet fully guided by a distinct idea of doing something for a definite end. Yet it is

just *these* actions that most resemble those which seem so purposive, in the ordinary building of a nest. All the others seem to me to belong to that large and important class of avine movements, which may be called the sexually ecstatic, or love-mad, group. Nor can these two classes of actions be separated from each other. The motion by which the hollow is produced is accompanied by—if it may not rather be said to be a part of—that most pronounced, peculiar, and, as it seems to me, purely sexual one of the tail, or rather of the anal parts; and there is, moreover, the very marked and distinctive run, with the set, rigid attitude—that salient feature of a bird's nuptial antics—which immediately precedes the rolling, in the same way that the run precedes the jump in athletics. All this set of actions must be looked upon as so many parts of one and the same whole thing, and to explain such whole thing we must call in some cause which will equally account for all its parts. The deliberate intention of making a nest will not do this, for many of the actions noted do not in the least further such a plan. On the other hand, sexual excitement may just as well produce rolling on the ground—as, indeed, it does in some other birds—and, perhaps, even pecking round about on it, as it may the stiff, set run, and those other peculiar movements. And if some of many movements, the cause of all of which is sexual excitement, should be of such a nature as that, out of them, good might accrue to the species, why should not natural selection seize hold of these, and gradually shape them, making them, at last, through the

individual memory, intelligent and purposive? since, by becoming so, their ability might be largely increased, and their improvement proceed at a quicker rate. I believe that in these actions of the peewit, which sometimes appear to me to stand in the place of copulation, and at other times commence immediately after it, with a peculiar run, and then go on, without pause or break, to other motions, all of which —even the curious pecking which I have noticed— have, more or less, the stamp of sexual excitement upon them, though some may, in their effects, be serviceable—I believe, I say, that in all these actions we see this process actually at work; and I believe, also, that in the nest-building of species comparatively advanced in the art, we may still see traces of its early sexual origin. I have been, for instance, extremely struck with the movements of a hen blackbird upon the nest that she was in course of constructing. These appeared to me to partake largely of an ecstatic—one might almost say a beatific—nature, so that there was a large margin of energy, over and above the actual business of building—at least it struck me so—to be accounted for. I was not in the least expecting to see this, and I well remember how it surprised and struck me. The wings of this blackbird were half spread out, and would, I think, have drooped—an action most characteristic of sexual excitement in birds—had not the edge of the nest supported them, and I particularly noted the spasmodic manner in which the tail was, from time to time, suddenly bent down. It is true that it then tightly clasped—as one may almost call it—the rim of the nest, pressing hard

against it on the outer side. But though such action may now have become part of a shaping process, yet it was impossible for me, when I saw it, not to think of the peewit, in which something markedly similar could have answered no purpose of this kind. Were the latter bird, instead of rolling on the ground, to do so in a properly constructed nest, of a size suitable to its bulk, the tail, being bent forcibly down in the way I have described, would compress the rim of it, just as did that of the blackbird. And were the blackbird to do what I have seen it do, on the bare ground, and side by side with the peewit, a curious parallel would, I think, be exhibited. As far as I have been able to see, the actions of rooks on the nest are very similar to those of the blackbird, and a black Australian swan, that I watched in the Pittville Gardens at Cheltenham, went through movements, upon the great heap of leaves flung down for it, which much resembled those of the peewit upon the ground. By what I understand from the swan-keeper at Abbotsbury, the male of the mute swan acts in much the same way. Of course what is wanted is extended observation of the way in which birds build their nests—that is to say, of their intimate actions when on them, either placing the materials or shaping the structure. If the origin of the habit has been as I imagine, one might expect, here, to see traces of it, in movements more or less resembling those to which I have drawn attention.

I have noticed the curious way in which both the male and female peewit—after movements which appear to me to differ considerably from the more

characteristic love-antics of birds in general—peck about at bits of grass, or any other such object growing or lying within their reach; and I have speculated on the possibility of actions like these, though at first of a nervous and merely mechanical character, having grown, at last, into the deliberate and intentional building of a nest. Whether, in the case of the peewit, we see quite the first stage of the process, I will not be certain; but we see it, I believe, in another of our common British birds, viz. the wheat-ear. My notes on the extraordinary behaviour of two males of this bird, whilst courting the female, I have published in my work, "Bird Watching,"[1] from which I will now quote a few lines bearing upon this point: "Instead of fighting, however, which both the champions seem to be chary of, one of them again runs into a hollow, this time a very shallow one, but in a manner slightly different. He now hardly rises from the ground, over which he seems more to spin, in a strange sort of way, than to fly; to buzz, as it were, in a confined area, and with a tendency to go round and round. Having done this a little, he runs from the hollow, plucks a few little bits of grass, returns with them into it, drops them there, comes out again, hops about as before, flies up into the air, descends, and again dances about." Now, here, a bird brings to a certain spot, not unlike such a one as the nest is usually built in—approaching it, at any rate—some of the actual materials of which the nest is composed, and I ask if, under the circumstances, it can possibly be imagined that such bird

[1] Page 72.

really is building its nest, in the ordinary purpose-implying sense of the term. As well might one suppose—so it seems to me—that a man, in the pauses of a fierce sword-and-dagger fight with a rival suitor, should set seriously to work house-hunting or furniture-buying. These wheat-ears, I should mention, had been following each other about, for the greater part of the afternoon, and though, as hinted, not exactly fire-eaters, had yet several times closed in fierce conflict. The manner in which the grass was plucked by one of them, partook of the frenzied character of their whole conduct. How difficult, therefore, to suppose that here, all at once, was a deliberate act, having to do with the building of a nest, before, apparently, either of the two rivals had been definitely chosen by the hen bird! Yet, when once the object had been seized, associations may have been aroused by it.

Facts of this kind appear to me to prove, at least, the possibility of a process so elaborate, and, seemingly, so purposive as that of building a nest, having commenced in mere mechanical, unintelligent actions. As further evidence of this, and also of the passing of such actions into a further stage—that of actual construction, more or less combined with intelligence—I will now quote from an interesting account, by Mr. Cronwright Schreiner, of the habits of the ostrich, as farmed in South Africa, which was published in the *Zoologist* for March 1897, but which I had not read at the time these ideas first occurred to me:—

"*The Nest Made by the Pair Together.*—The cock goes down on to his breast, scraping or kicking the sand out, backwards, with his feet. . . . The hen

stands by, often fluttering and clicking her wings, and helps by picking up the sand, with her beak, and dropping it, irregularly, near the edge of the growing depression." (Compare the actions, as I have noted them, of both the male and female peewit.)

"*The Little Embankment Round the Nest.*—The sitting bird, whilst on the nest, sometimes pecks the sand up, with its beak, nearly as far from the nest as it can reach, and drops it around the body. A little embankment is thus, gradually, formed. . . . The formation . . . is aided by a peculiar habit of the birds. When the bird on the nest is much excited (as by the approach of other birds, or people) it snaps up the sand, spasmodically, without rising from the nest, and without lifting its head more than a few inches from the ground. The bank is raised by such sand as falls inward. The original nest is, merely, a shallow depression."

Remarks follow on the use of the bank, which has become a part—and an important part—of the nest. We, however, are concerned with the origin both of it and the depression. It seems clear, from the account, that the former is made, in part at least, without the bird having the intention of doing so; whilst, to make the latter, the cock assumes the attitude of sexual frenzy (described in the same paper, and often witnessed by myself), an attitude which does not seem necessary for mere scratching, nor, indeed, adapted for it. Why should a bird, possessing such tremendous power in its legs—moving them so freely, and accustomed to kick and stamp with them—have to sink upon its breast in order to scratch a shallow depression? Surely,

considering their length, they could be much less conveniently used, for such a purpose, in this position, than if the bird stood up. If the scratching, however, has grown out of the sexual frenzy, we can, then, well understand the characteristic posture of the latter being continued. I suspect, myself, that the breast of the bird still helps to make the depression, as in courtship it must almost necessarily do—for the ostrich rolls, on such occasions, in much the same way as the peewit.

These nesting habits of the ostrich[1] seem to me to support my idea of the origin of nest-making. How strange, if "spasmodic" and "excited" actions have had nothing to do with it, that they should yet help, here, to make the nest! How strange that the cock ostrich, only, should make the depression, assuming that attitude in which he rolls when courting—or, rather, desiring—the hen, if this has no connection with the fact that it is he only (or he pre-eminently) who, in the breeding time, acts in this manner! In most birds, probably—though this has been taken too much for granted—those frenzied movements arising out of the violence of sexual desire, are more violent and frenzied in the male than in the female. In this way we may see, upon my theory, the reason why the cock bird so often helps the hen in making the nest; nor is it more difficult to suppose that the hen, in most cases, may have

[1] There are two kinds of ostriches—the scientific, or professorial kind, that behaves in a way peculiar to itself, because it is "a *ratite* bird," and the common, vulgar kind, as known to people in South Africa, who have observed its habits on the ostrich-farms. For the first, see various authorities, and for the second, Mr. Cronwright Schreiner, in the *Zoologist*, as mentioned above.

been led to imitate him, than it is to suppose the converse of this. We might expect, however, that as the process became more and more elaborate and intelligent, the chief part in it would, in the majority of instances, be taken by the female, as is the case; for as soon as a nest had come to be connected, in the bird's mind, with eggs and young, then her parental affection (the "στοργὴ" of Gilbert White), by being stronger than that of the male, would have prompted her to take the lead. I can see no reason why acts which were, originally, nervous, merely—spasmodic, frenzied—should not have become, gradually, more and more rational. Natural selection would have accomplished this; for, beneficent as actions, blindly performed, might be to an animal, they would, surely, be more so, if such animal were able, by the exercise of its intelligence, to guide and shape them, in however small a degree. Thus, not only would those individuals be selected, who performed an act which was advantageous, but those, also, whose intelligence best enabled them to see to what end this act tended, and, so, to improve upon it, would be selected out of these. Such a process of selection would tend to develop, not only the general intelligence, but, in a more especial degree, intelligence directed along certain channels, so that the latter might be out of proportion to the former, and this is what one often seems to see in animals.

Thus, as it appears to me, instead of instinct having commenced in intelligence, which has subsequently lapsed, the latter may often have grown gradually out of the former, blind movements, as we may call them, coming, at length, to have

an aim and object, and so to be rational ones. It may be asked, by what door could this intelligence, in regard to actions originally not guided by it, have entered? I reply, by that of memory. A bird does not make a nest or lay eggs once only, but many times. Therefore, though the actions by which the nest is produced, on the first occasion, may have no object in them, yet memory, on the next and subsequent ones, will keep telling the bird for what purpose they have served. Such individuals as remembered this most strongly, and could best apply their recollections, would have an advantage over the others, for their actions would now be rational, and, being so, they would be able to modify and improve them. Their offspring would inherit this stronger memory and these superior powers, and also, probably, a tendency to use them both, in the same special direction. Whether knowledge itself may not, in some sort of way, be inherited, is, also, a question to be asked. If a bird instinctively builds a nest, may it not instinctively know why it does so? If there is any truth in these views, we ought to see, in some of the more specialised actions of animals—and, more particularly, of birds—a mingling, in various proportions, of intelligence and blind, unreasoning impulse. This, to my mind, is just what we do see, in many such; as, for instance, in the courting or nuptial antics, in those other ones, perhaps more extraordinary, which serve to draw one's attention from the nest or young, and, finally, in the building of the nest. Not only do the two elements seem mingled and blended together, in all of these, but they are mingled in varying

proportions, according to the species. No one who has seen both a snipe and a wild duck "feign," as it is commonly called, being disabled, can have helped noticing that far more of intelligence seems to enter into the performance of the latter bird, than into that of the former. The moor-hen is not a bird that is known in connection with any special ruse or device for enticing intruders from its young, but I have seen one fall into a sort of convulsion, on the water, upon my appearing, very suddenly, on the bank of a little stream where she was swimming, with her young brood. The actions of a snipe, startled from its eggs, were much more extraordinary, and equally, as it seemed to me, of a purely nervous character.[1] Here, surely, we must have the raw material for that remarkable instinct, so highly developed in some birds, by which they attract attention from their young, towards themselves. But, if so, this instinct is not lapsed intelligence, but, rather, hysteria become half-intelligent. The part which mere muscular-nervous movements may have played, under the agency of natural selection, in the formation of some instincts, has not, I think, been sufficiently considered.

There is another class of facts which, I think, may be explained on the above view of the origin of the nest-building instinct. Some birds pair, habitually, on the nest, whilst a few make runs, or bowers, for the express purpose, apparently, of courting, and where pairing, not improbably, may also take place. Now, if the ancient nest had been, before everything, the place of sexual intercourse,

[1] "Bird Watching," pp. 60, 61.

we can understand why it should, in some cases, have retained its original character, in this respect.

What, now, is the real nature of those frenzied motions in birds, during the breeding season, before they have passed, either into what may properly be called courting antics, or the process of building a nest? I have described what the peewit actually does, and I suggest that the rolling of a single bird differs only, in its essential character, from actual coition, by the fact of its being singly performed, and that, thus, the primary sexual instinct (*der thierische Trieb*) directly gives birth to the secondary, nest-building one. It is true that the pairing, when I saw it, did not take place on the same spot where the rolling afterwards did. Nevertheless, the distance was not great, and it varied considerably. The run, which preceded the rolling, commenced immediately on the consummation of the nuptial rite, as though arising from the excitation of it—as may be seen with other birds; and if this run, which varied in length, were to become shorter and ultimately to be eliminated altogether, the bird would then be pairing, rolling, and at last, as I believe, laying its eggs in one and the same place.[1] Supposing this to have been originally the case, then the early nest would have been put to two uses, that of a thalamum and that of a cradle, and to these two uses it is in some cases put now, as I have myself seen. That out of one thing having two uses—"the bed contrived a double debt to pay"—there should have come to be two things, each having

[1] The female peewit, it must be remembered, acted in much the same way as the male, and the sexual antics of many birds seem to be identical in both sexes.

one of these uses—as, *e.g.*, the nest proper and the bower—or that the one use should have tended to eclipse and do away with the other, is, to my idea, all in the natural order of events; but this I have touched upon in a previous chapter. To conclude, in the peewit movements of a highly curious nature immediately succeed, and seem thus to be related to, the generative act, and whilst these movements in part resemble that act, and bear, as a whole, a peculiar stamp, expressed by the word "sexual," some of them, not separable from the *tout ensemble*, of which they form a part, suggest, also, the making of a nest; and, moreover, something much resembling a peewit's nest is, by such movements, actually made.

Taking all this together, and in conjunction with the breeding and nesting habits of the ostrich and some other birds, we have here, as it seems to me, an indication of some such origin of nest-building, amongst birds, as that which I have imagined. That the art is now, speaking generally, in such a greatly advanced state is no argument against its having thus originated, since there is no limit to what natural selection, acting in relation to the varying habits of each particular species, may have been able to effect. Certainly, the actual evidence on which I found my theory, though it does not appear to me to be weak in kind, is very scanty in amount. To remedy this, more observation is wanted, and what I would suggest is that observant men, with a taste for natural history, should, all over the world, pay closer attention to the actual manner in which birds do all that they do do, in the way of courting,

displaying, anticking, nest-building, enticing one from their young, fighting, &c. &c.—all those activities, in fact, which are displayed most strongly during the breeding season. I do not at all agree with a certain reviewer of mine, that the scientific value of such observations has been discounted by Darwin—as if any man, however great, could tear all the heart out of nature! On the contrary, I believe that the more we pry the more will truth appear, and I look upon mere general references, such as one finds in the ordinary natural history books, as mere play-work and most sorry reading for an intellectual man. What is the use of knowing that some bird or other goes through "very extraordinary antics in the season of love"? This is not nearly enough. One requires to know what, exactly, these antics are, the exact movements of which they consist—the minutest details, in fact, gathered from a number of observations. When one knows this one may be able to speculate a little, and what interest is there, either in natural history or anything else, if one cannot do that? *Mere* facts are for children only. As they begin to point towards conclusions they become food for men.

In the study of bird-life nothing perhaps is more interesting than the antics of one sort or another which we see performed by different species, and the nature and origin of which it is often difficult to understand. As has been seen, I account for some of these through natural selection acting upon violent nervous movements, the result either of sexual or some other kind of emotion — as, for instance, sudden fright when the bird is disturbed

on the nest, or elsewhere, with its young, producing a sort of hysteria or convulsion; others I believe to be due to what instinct, generally, is often supposed to be, namely, to the lapse of intelligence. I believe that if a certain action or set of actions is very frequently repeated, it comes to be performed unintelligently; nay, more, that there is an imperious necessity of performing it, independently of any good which it may do. It is watching birds fighting which has led me to this conclusion. Far from doing the best thing under the circumstances, they often appear to me to do things which lead to no particular result, neglecting, through them, very salient opportunities. A striking instance of this, though not quite of the kind that I mean, is offered by the stock-dove, for when these birds fight, they constantly interrupt the flow of the combat, by bowing in the most absurd way, not to one another, but generally, so to speak, for no object or purpose whatever, apparently, but only because they must do so. The fact is, the bow has become a formula of courtship, and as courting and fighting are intimately connected, the one suggests the other in the mind of the bird, who bows, all at once, under a misconception, and as not being able to help it. But though there is no utility here, it may be said that there is a real purpose, though a mistaken one, so that the bird is not acting automatically. It is in the actual movements of the fight itself—in the cut and thrust, so to speak—that I have been struck by the automatic character impressed upon some of them. This was especially the case with a pair of snipes that I watched fighting, by the little streamlet here, one morning, perhaps

for half-an-hour. They stood facing each other, drawn up to their full height, and, at or about the same instant, each would give a little spring into the air, and violently flap the wings. I would say that they struck with them—that manifestly was what they should have done, the *rationale* of the action—but the curious point is that this did not seem to be necessary, or, at any rate, it was often, for a considerable space of time, in abeyance. The great thing appeared to be to jump, and, at the same time, to flap the wings, and as long as the birds did this, they seemed satisfied, though there was often a foot or more of space between them. Sometimes, indeed, they got closer together, and then they had the appearance of consciously striking at one another; but having watched them attentively, from beginning to end, I came to the conclusion that this was more apparent than real, and that, provided the wings were waved, it mattered little whether they came in contact with the adversary's person, or not. For when these snipes jumped wide apart, or, at any rate, at such a distance that each was quite beyond the other's reach, they did not seem to be struck with the futility of hitting out, under these circumstances, or to be greatly bent on closing, and putting an end to such a fiasco. Far from this, they went on in just the same way, and, for one leap in which they smote each other, there were, perhaps, a dozen in which they only beat the air. I do not mean to suggest that the birds were not actually and consciously fighting, but it certainly did seem to me that their principal fighting action—the blow, with the leap in the air, namely—had become stereotyped

and, to some extent, dissociated from the idea of doing injury, in which it had originated. It seemed, in fact, to be rather an end in itself, than a means to an end. Another and very noticeable point, which helped to lead me to this view, was that, except in this way, which, as I have said, was mostly ineffective, the birds seemed to have no idea of doing each other harm. Often they would be side by side, or the beak of the one almost touching the back or shoulder of the other. Yet in this close contiguity, where the one bird was often in a position very favourable, as it seemed, for a non-specialised attack, no such attack was ever made; on the contrary, to go by appearances, one might have thought them both actuated by a quite friendly spirit. After about half-an-hour's conflict of this description, these snipes flew much nearer to me, so that I could see them even more distinctly than I had done before. I thought, now, that I saw a perplexed, almost a foolish, look on the part of both of them, as though they had forgotten what, exactly, was the object which had brought them into such close proximity; and then, each seeming to remember that to jump and flap the wings was the orthodox thing to do, they both did it, in a random and purposeless sort of way, as though merely to save the situation. This was the last jump made, and then the *affaire* appeared to end by the parties to it forgetting what it was about, or why there had been one. My idea is that such oblivion may prevail, at times, during the actual combat, which becomes, then, a mere set figure, an irrational dance or display, into which it might, by degrees, wholly pass.

There was another point of interest in this interesting spectacle. The birds, when they were not actually springing or flapping, mutually chased, or, rather, followed and were followed by, each other. But this, too, seemed to have become a mere form, for I never saw either of them make the slightest effort to dash at and seize the other, though they were often quite at close quarters and never very far apart. When almost touching, the foremost bird would turn, upon which the other did also, as a matter of course, but instead of running, walked away in a formal manner, and with but slightly quicker steps. The whole thing had a strange, formal look about it. When this following or dogging—chasing it cannot properly be called—passed into the kind of combat which I have described, it was always in the following manner. The bird behind, having pressed a little upon the one in front, instead of making a dash at him—as would have seemed natural, but which I never once saw—jumped straight into the air, flapping its wings, and the other, turning at the same instant, did likewise, neither blow, if it could indeed be called one, taking effect. The two thus fronted one another again, and the springing and flapping, having recommenced, would continue for a longer or shorter period. When these snipes leaped, their tails were a little fanned, but not conspicuously so. Another thing I noticed was, that the bird retreating often had its tail cocked up perpendicularly, whereas this was not the case with the one following.

Both the two points that struck me in the fighting of these snipes, viz. the apparent inability to

fight in any but one set way, and the formal, alternate following of, and retreating from one another, I have noticed, also, in the fighting of blackbirds, and other birds, whilst the last has been pushed to quite a remarkable extreme in the case of the partridge. Pairs of these birds may be seen, as early as January, running up and down the fields—often along a hedge, or, here, a row of pine trees—as though to warm themselves, but really in pursuit of one another, though the interval between them is often so great that, but for both turning at the same precise instant of time, one would think they were acting independently. This interval may be as much as a hundred yards, or even more, and it is often exactly maintained for a very long time. At any moment the two birds, whilst thus running at full speed, may turn, and the chase is then continued in exactly the same way, except that it is now in an opposite direction, and that the pursuer and pursued have changed parts. Apollo—one might say, were the sport of an amorous nature—has become Daphne, Daphne Apollo; for as each turns, each becomes actuated by the spirit that, but a second before, had filled the other—a complete *volte face* upon either side, both spiritually and corporeally. Keepers have, in fact, told me that it is the male and female partridge, who thus chase one another; but this, from my own observation, I do not believe. Often, indeed, the birds will get out of sight before the interval between them has been lessened, or the pursued one will fly off, followed by his pursuer, without anything in the nature of a combat having occurred. At other times, however,

the distance separating the two is gradually diminished, the turns, as it lessens, become more and more frequent, and, at length, a sort of sparring scuffle takes place, in which beak as well as claw is used. One of the birds has been run down, in fact, but the odd thing is that, as soon as it escapes, it turns round again, upon which the other does also, and the scene that I have described recommences. Now why should a bird that has just had the disadvantage in a struggle, and is being pursued by the victor, turn so boldly round upon him, and why —this in a much higher degree—should that victor, with the prestige of his victory full upon him, turn, the instant the bird he has vanquished does, and run away from him like a hare? In all this there appears to me to be something unusual, suggesting that what was, originally, an act of volition, is now no longer so, but has become an automatic reaction to an equally automatic stimulus. The will, as it appears to me, except, of course, in *los primeros movimientos*, has almost dropped out of use, so that when the drama has once commenced, all the rest follows of itself. I have said that the two birds turn simultaneously. Strictly speaking, I suppose that one of them—the pursued one probably—makes the initial movement towards doing so: but so immediate is the action of the other upon it, that it often looks as though both had swung round at the same instant of time. This, surely, at a distance of fifty or a hundred yards, is, in itself, a very remarkable thing, though, as far as I can make out, these curious chases have not attracted much attention. If we wish to see their real origin,

we must watch the fighting of other species. In all, or nearly all, birds, there is a mixture of pugnacity and timidity. The former urges them to rush upon the foe, the latter to turn tail and retreat, whenever they are, themselves, rushed upon. Thus, in most combats, there is a good deal of alternate advancing and retreating, but this is no more than what one might expect, and has a quite natural appearance. In various species, however, the tendency is exaggerated in a greater or less degree, until, in the partridge, we find it developed to a quite extraordinary extent; whilst there is something—a sort of clockwork appearance in the bird's actions, due, I suppose, to the wonderful simultaneousness with which they turn, and the length of time for which they keep at just the same distance from one another, with a wide gap between them—which strikes one as very peculiar.

Do we not see in these varying degrees of one and the same thing, commencing with what is scarce noticeable, and ending in something extremely pronounced, the passage, through habit and repetition, of a rational action into a formal one? Do we not, in fact, see one kind of *antic*, with the cause of it? A natural tendency has led to a certain act being so frequently performed that it has become, at last, a sort of set figure that can no longer be shaken off. As, in the case of the partridge, this figure is gone through over and over again, sometimes for an hour or more together, I believe that it will, some day, either quite take the place of fighting, with this species, or become a thing distinct and apart from it; so that its original meaning being no longer recognisable,

it will be alluded to as "one of those odd and inexplicable impulses which seem, sometimes, to possess birds," &c. &c.—so difficult to explain, in fact, that some naturalists would prefer not to try to. For myself, I like trying, and I see, in the curiously set and formal-looking combats of many birds, a possible origin of some of those so-called dances or antics which do not seem to bear any special relation to the attracting or charming of the one sex by the other. The whole thing, I believe, is this. Anything constantly gone through, in a particular manner, becomes a routine, and a routine becomes, in time, automatical, the more so, probably, as we descend lower in the scale of life. Whilst the actions get more and more fixed, the clear purpose that originally dictated them, becomes, first, subordinated, then obscured, finally forgotten, and intelligence has lapsed. We have, then, an antic, but when this has come about, change is likely to begin. For the actions being not, now, of any special use, there will be nothing to keep them fixed, and as muscular activity goes hand in hand with mental excitement, such excitement will, probably, give rise to other actions, which, having no definite object, and being of an energetic character, must often seem grotesque. Movements, indeed, appear odd in proportion as we can see no meaning in them. There being, now, such antics, accompanied with excitement, it is probable that excitement of any kind will tend to produce them, and, the strongest kind of excitement being the sexual one, they are likely to become a feature of the season of love. Moreover, the most vigorous birds

will be the best performers in this kind, and if these be the males, then, whether they win the females by their vigour, or whether the females choose them for the result of it—their antics namely—in either case these will increase. For my part, I believe that the one sex will, generally, take an interest in what the other does, which would lead to more and more emulation, and more and more choice. Thus, however any antic may have originated, it seems to me very probable that it will, ultimately, become a sexual one, and it will then often be indistinguishable from such as have been entirely sexual in their origin. Examples of the latter would be, in my view, those frenzied motions, springing from the violence of the sexual passion, which, by their becoming pleasing to the one sex, when indulged in by the other, have been moulded, by this influence, into a conscious display. Inasmuch, however, as, upon my supposition, almost any action can become an antic, and as a long time may then elapse before it is employed sexually, it is natural that we should find, amongst birds, a number of antics which are not sexual ones, and which neither add to, nor detract from, the evidence for or against sexual selection.

It may be said that the snipes which I saw fighting were only one pair. Still they were a pair of snipes, and as representative, I suppose, as any other pair of the same bird. No doubt there would be degrees of efficiency and formality, but this would not affect the general argument. Wherever, in nature, any process is going on, some of the individuals of those species affected by it will be more affected than others.

COAL-TIT

CHAPTER VIII

TITS, as I think I have said, or implied, are a feature of Icklingham. They like the fir plantations, which, though of no great dimensions—for they only make a patch here and there—are to them, by virtue of their tininess, as the wide-stretching forests of Brazil. Sitting here, in the spring-time, on the look-out, with a general alertness for anything, but not thinking of tits in particular, one may become, gradually, aware—for their softness sinks upon one, one never sees them suddenly—of one of these little birds dropping, every few minutes, from the branches of a fir to the ground, and there disappearing. In a lazy sort of way you watch—to be more direct I once watched—and soon I saw there were a pair. They crossed one another, sometimes, going or coming, and, each time, the one that

came had something very small in its bill. Walking to the tree, I found, at only a foot or two from its trunk, a perfectly circular little hole, opening smoothly from amongst the carpet of pine-needles, with which the ground was covered. Against this I laid my ear, but there were no chitterings from inside, all was silent in the little, future nursery—for evidently the nest was a-making. But how, now, was I to watch the birds closely? When I sat quite near they would not come, the cover being not very good; when I lay, at full length, behind a fir-trunk, and peeped round it, I could see, indeed, the ground where the hole was, but not the hole itself, which was just what I wanted to, inasmuch as, otherwise, I could not see the birds enter it. How they did so was something of a mystery, for they just flew down and disappeared, without ever perching or hopping about—at least I had never seen them do so. Here, then, was a difficulty—to lie, and yet see the hole, or to sit or stand, and look at it, without frightening the birds away. But Alexander cut the Gordian knot, and I, under these circumstances, climbed a fir-tree. There was one almost by the side of the one they flew to, and the closeness of its branches, as well as my elevated situation amongst them—birds never look for one up aloft—would, I thought, prevent their noticing me. Up, therefore, I got, to a point from which I looked down, directly and comfortably, on their little rotunda. Soon one of the coal-tits flew into its tree—the same one always—and dropping, softly, from branch to branch, till it got to the right one, dived from it right into the tiny aperture, and disappeared through that, in

a feather-flash. It was wonderful. There was no pause or stay, not one light little perch on the smooth brink, not a flutter above it even, no twist or twirl in the air, nothing at all; but he just flew right through it, as though on through the wide fields of air. I doubt if he touched the sides of it, even, though the hole looks as small as himself. And it is the same every time. With absolute precision of aim each bird comes down on that dark little portal, and vanishes through it, like a ball disappearing through its cup. If they touch it at all, they fit it like that.

For upwards of an hour, now, the two birds pass and repass one another, popping in and out and carrying something in with them each time, but such a small something that I can never make out what it is—a little pinch of stuff, one may call it, only just showing in the beak. Sometimes it is green, as though the birds had picked off tiny pieces of the growing pine-needles, and sometimes it looks brown, which may mean that they have pulled off some bark—but always very small. An attempt to follow the birds on their collecting journeys, and see what they get, is unsuccessful. They fly, very quickly, into the tops of the firs, which stand dark and thick all around, and are immediately lost to view. Whatever the material is, they come to the nest with it every five or six minutes, nor do they once make their entrance except by flying directly through the aperture. They would be ashamed, I think, to perch and hop down into it. Very pretty it was to see these little birds coming and going—especially coming. Sometimes they would

be with me quite suddenly, and yet so quietly, so mousily, they never gave me a start. At other times I used to see them coming, fluttering through the sun-chequered lanes of the fir-trees, till, reaching their very own one, they would sink, as it were, through its frondage, full of caution and quietude, descending, each time, by the same or nearly the same little staircase of boughs, from the bottom step of which they flew down. Some days afterwards, they were still building their nest, but after that I had to leave. The nest itself I pulled up and examined, a year afterwards, and it disproved all my theories as to what the birds had been building it with. It was of considerable size—round, as was the cavern in which it lay—and composed, almost wholly, of three substances, viz. moss, wool, and rabbits' fur. The two latter had been employed to form the actual cup or bed—the blankets, so to speak—whilst the moss made the mattress. All three were in great abundance, and no royal personage, I think—not even Hans Andersen's real princess—can ever have slept in a softer or warmer bed. It seems wonderful—almost incredible—that these two tiny birds, carrying, each time, such a tiny little piece, in their bills, could ever have got so great a mass of materials together. There it was, however, one more example of the great results which spring from constantly repeated small causes. The cavity in which the nest was placed, was, no doubt, a natural one, but the hole by which the birds entered it was so very round, that it must, I think, have been their own work, or, at least, modified by them. It looked just as if a woodpecker had made it.

It was in a hedge opposite to a plantation like this —a hedge made of planted branches of the Scotch fir, such as are common in these parts—that I once watched a pair of long-tailed tits building their much more wonderful nest. Like the coal-tits they are joint-labourers, and both seem equally zealous. Often they arrive together, each with something in its bill. One only enters, the other stays outside and waits for it to come out, before going in itself. This, at least, is the usual régime. Occasionally, if the bird inside stays there a very long time, the other gets impatient, and goes in too, so that both are in the nest together—but this one does not often see. It is a prettier sight to see one hang at the entrance with a feather in his bill, which is received by the other—just popping out its head—upon which he flies away. This is in the later stages, when the nest is being lined, and when the birds come, time after time, at intervals of a few minutes, each with a feather in its bill. White these feathers often are, and of some size (so that they look very conspicuous). I have seen a bird, once, with two—two broad, soft, white ones that curled round, backwards, on each side of its head, so as almost to hide it. Such feathers must be brought from some particular place—a poultry-yard most probably—and both birds arriving with them, at the same time, is proof, or at least strong evidence, that they do their collecting in company. I have noticed, too, that if one bird comes with a feather of a different kind — for instance, a long straight one instead of a soft curled one—the other does too, showing how close is the association. At other times they bring lichen—with

A PRETTY PAIR

Long-Tailed Tits Building

p. 198.

GO SMALL
GO HOME

which the whole of the nest, outside, is stuck over—and so tiny are the pieces they carry, that I have, time after time, been unable to see them, even though sitting near and using the glasses. I have been so struck with this, that, sometimes, I have thought the lichen was carried rather in the mouth than in the bill, by which means it would be moistened, and so stick the easier on the outside surface of the nest.

It is most interesting to see the nest growing under the joint labours of the two little architects, and it does so at a quicker pace than one would have thought possible. At first it is a cup, merely, like most other nests—those of the chaffinch, goldfinch, linnet, &c.—and it is because the birds will not leave off working, but continue to build, that the cup becomes deeper and deeper till it is a purse or sack. Here, as I imagine, we see the origin of the domed nest. It was not helped forward by successive little steps of intelligence, but only by the strength of the building instinct, which would not let the birds make an end. The same cause has produced also, as I believe, the supernumerary nests which so many birds make, and which are such a puzzle to many people, who wonder at what seems to them extra labour, rather than extra delight. Even naturalists are always talking about the labour and toil of a bird, when building, but this, in my opinion, is an utterly erroneous way of looking at it. As Shakespeare says, "the labour we delight in physics pain," and what delight can be greater than that of satisfying an imperious and deep-seated instinct? It is in this that our own greatest

happiness lies, whilst the inability, from various causes, to do so, constitutes misery. But with the building bird there is no real labour, nothing that really makes toil, only a fine exhilarating exercise which must be a pleasure in itself, and to which is added that pleasure which ease and excellence in anything we do and wish to do, confers. The best human equivalent for the joy which a bird must feel in building its nest, is, I think, that of a great artist or sculptor, whose soul is entirely absorbed in his work. Those who pity the toils of such men in producing their masterpieces may, with equal propriety, pity the bird; but here, too, the latter has the advantage, for not even the sway of genius can be so o'ermastering as that of a genuine instinct, the strength of which we must estimate by those few primary ones—we call them passions—which are left in ourselves.

It is this mighty joy in the breast of the little tit, which, by the help of natural selection, has produced, as I believe, his wonderful little nest, and if we watch him building we may get a hint as to how the charming little round door that gives admission to it, has come about. He did not contrive it, but by having, always, his one way in and out, and continuing to build, it grew to be there; for even when the nest is but a shallow cup, open all round, the birds enter and leave it by one uniform way, so that this way must be left, right up to the very last, by which time it has become that neat little aperture, which looks so nicely thought out. Something like design may, perhaps, now have entered into the construction, which would account for the hole getting,

gradually, higher, in the side of the nest—though this, too, I am inclined to attribute to the mere love of building. The bird builds everywhere that it can, and thus the place where it enters gets higher, with the rest of the nest. When, however, the top of the nest, on one side, is pulled over, so as to meet the other side,[1] where the entrance is, it can go no higher, since, if it did, the bird would either be kept in or out. Thus, as it appears to me, the exact position of the hole in the nest, which is a somewhat curious one, is philosophically accounted for.

When one of a pair of long-tailed tits enters the nest, he first pays attention to that part of it which is exactly opposite to him, as he does so. This he raises with his beak, and, also, by pushing with his head and breast. He then, often, disappears in the depths of the cup, and you see the sides of it swell out, now in one place and now in another, as he butts and rams at them, which he does not only with his head, but by kicking with his legs, behind him. Then he turns round, the long tail appearing where the head has lately been, whilst the head emerges, projecting over the rim in exactly the same place as where he entered, but looking, now, outwards. This part he now pushes down with his chin, just as he raised the other with his head and beak, and having done this, he comes out. But often, sitting in the nest as he entered it, he turns his head right

[1] This, in itself, has the appearance of design only. The bird, however, works from within, and, if I mistake not, there would be a growing tendency for the structure, as it rose in height, to bend over inwards rather than outwards.

round, on one side or another, examining and manipulating the edges; and sometimes, bending it down over the rim, he presses or arranges a lichen, on the outside. This, however, he does more rarely than one would think, his best attention being given to the interior. Sometimes, too, he flutters his wings in the nest, as though to aid in the moulding of it. There is one extraordinary power which these tits possess, which is that of turning their bodies quite round in the nest, whilst keeping the tail motionless, and in exactly the same place all the time. I have often seen—or seemed to see—them do this, but as the tail sticks upright, and is—till the cup gets too deep—a very conspicuous object, it would not be easy to be mistaken. How they do it I know not—they are little contortionists—but I have often noticed how loosely and flexibly the long tail feathers of these birds seem just stuck into the body. There is another thing that I have seen them do, viz. turn the head entirely round without any part of the body seeming to share in the movement; but here, I think, there must have been some hocus-pocus.

I have spoken of these tits having but one way of entering and leaving the nest, even when all ways lie open to them: but, more than this, they have one set path, by which they approach and retire from it. You first notice this when one of the birds passes, inadvertently, on the wrong side of some twig or bough, which makes a conspicuous feature in its accustomed path. The eye is caught by the novelty, and you realise, then, that it is one. This happens but rarely, and, when it does, it has

sometimes struck me that the bird feels a little confused, or not quite easy, in consequence. It has such a feeling, I feel sure, which, though slight, yet just marks its consciousness of having deviated from a routine. Possibly the feeling is stronger than I am imagining, for on one occasion, at least, I have seen a bird that had got the wrong side of a twig palisade, so to speak, in approaching its nest, turn back and pass it, on the right side. The nest, in this instance also, was in one of those fine, open hedges, made of the branches of the Scotch fir—planted and growing—which are common in this part of Suffolk, and through these there was a regular "approach" to the house, not straight, but in a crescent, as though for a carriage to drive up—the "sweep" of the days of Jane Austen—and the birds always went up and down it like dear little orthodox things as they are. During the later stages of construction, the hole in the side of the nest becomes so small and tight, that even these *petite* little creatures have, often, to struggle quite violently, in order to force themselves through it; and this, I think, also, is evidence that the door is not due to design—that the bird never has the thought in its mind, "There must be a door to get in and out by." Instead of that, it keeps getting in and out, and this, of necessity, makes the door. These tits, when building, seem to rest, for a little, in the nest, before leaving it, and sometimes one will sit, for some minutes, quite still, with its head projecting through the aperture, looking like a cleverly-painted miniature in a round frame. At other times the tail projects, and that, though not

quite such a picture, has still a charm of its own. Nothing can look prettier than these soft, little pinky, feathery things, as they creep, mousily, into their soft little purse of a nest: nothing can look prettier than they do, as they sit inside it, pulling, pushing, ramming, patting, and arranging: finally, nothing can look prettier than they look, as they again creep out of it, and fly away. It is a joy to watch them building, and their perpetual feat of turning in a way which ought to dislocate their tail, without dislocating it, is an ever-recurring miracle. Charming in and about the nest, they are; charming, too, in the way they approach it. They come up so softly and quietly, creeping from one tree or bush to another, seeming almost to steal through the air. They have a pretty, soft note, too, a low little "chit, chit," which they utter, at intervals, and which often tells you they are there, before you catch sight of them. To hear that soft chittery note, and then to catch a soft pinkiness, with it, are two very pleasant sensations. Another is to see the one bird working in the nest, and to hear the other chittering in the neighbourhood, whilst it waits for it to come out.

In the absence of both the owners from the nest they were building, I have seen a wren creep very quietly into it, and, after remaining there for a little, creep as quietly out again. He carried nothing away with him, that I could see, so that pillage may not have been his object, though I know not what else it could have been. Perhaps it was simple curiosity, or, again, it may have been but a part of his routine work. Such a nest, with its hole of

entrance, may have seemed to him like any other chink or cavity, which he would have been prepared to enter on general principles of investigation. Nests, however, in process of building by one bird, are looked at by others as useful supplies of material for their own—little depôts scattered over the country. I have seen a pair of hedge-sparrows fly straight to a blackbird's, and then on, with grass in their bills. Another blackbird's nest, the building of which I was watching, supplied a blue tit with moss, whilst, in the very same tree, a pair of golden-crested wrens had theirs entirely demolished by an unfeeling hen chaffinch.

In my own experience it is the hen chaffinch, alone, that builds the nest, and I have even seen her driving away a cock bird, which I took to be her mate. After putting him to flight, this particular hen made fifteen visits to the nest, at intervals of about ten minutes, bringing something in her beak each time, and worked at it, singly, with great fervour and energy. To the actions which I have been describing in the long-tailed tits—viz. pressing herself down in it, ramming forward with her breast, kicking out with her feet, behind, and so on—actions, I suppose, common to most nest-building birds—she added that one of clasping the rim tightly with her tail, bent strongly down for the purpose, which I have referred to, before, in the blackbird. I could not, however, repeat the comments which I have made when describing it in her case. Whatever may have been the origin of the habit, it has become, in the chaffinch, a mere business-like affair—purely utilitarian, doubtless, in its inception and object.

Though upon this and other occasions of the nest-building, the hen chaffinch, alone, has seemed to be the architect, it by no means follows that this is always the case. A process of transition is, as I believe, taking place in this respect with the males of various birds. With the long-tailed tits, for instance, we have just seen how prettily husband and wife can work together; and that they do so in the great majority of instances, I have little doubt. Yet the first time that I ever watched these birds building, it was only one of the pair who did anything; the other—doubtless the male—though he came each time with his mate, never brought anything with him, and did not once enter the nest. He did not even go very near it, but merely stayed about, in the neighbourhood, till the worker came out, on which the two flew off together. This has been exactly the behaviour of the cock blackbird during nidification, in such cases as have fallen under my observation; and here I have been a very close watcher, for hours at a time, and for several days in succession. Yet I have, myself, seen the cock flying off with grass, from a field, whilst Mr. Dewar has seen him fly up with some into the ivy on a wall, where a nest was known to be in construction. The cock nightingale attends the hen, when building, in just the same way that the cock blackbird does, but I have not yet seen him take a part in its construction. Now to take the blackbird—since here we have a clear case of individual difference—is it a process of transition from one state of things to another, that we see, or has the transition been made, and are the exceptional instances due to reversion

merely? But then, which are the exceptional instances, or in which direction is the change proceeding? Is the male becoming, or was he once, a builder or a non-builder? For myself, I incline to the transitional view, and inasmuch as the lapse of such a habit as nest-building must be consequent upon a loss of interest in it—which would mean a decay of the instinct—this does not seem to me consistent with the extremely attentive manner in which the cock follows the hen about, and the manifest interest which he takes in all she does. It seems to me more likely, therefore, that he is learning the art than losing it. Still, as an instinct might weaken very gradually, it is impossible to do more than conjecture which way the stream is running, if we look only at a single species. The true way would be to take all the species of the genus to which the one in question belongs, and find out the habits of the majority, in regard to this special point. If both the male and female of the genus *Turdidæ* help, as a rule, in building the nest, then this, no doubt, was the ancient state of things, and *vice versâ*.

One might suppose—it would seem likely on a *primâ facie* view of it—that where the cock bird took no part in the building of the nest, he would take none, either, in incubating the eggs. This is so with the blackbird—at least I have never come upon the male sitting, and whenever I have watched a nest where eggs were being incubated, there has never been any change upon it; the birds, that is to say, have never relieved one another, but the hen, having gone off, has always returned, the nest being

empty in the interval. But if the suppression, in the male bird, of these two activities—of nest-building and incubation—are related, by a parity of reasoning one would suppose that he would take no part in the feeding of the young. This, however, with the blackbird, is by no means the case, for the cock is as active, here, and interested as the hen—or nearly so. At least he recognises a duty, and performs it to the best of his ability. It is the same with the wagtail, and, no doubt, with numbers of other birds—a fact which seems to suggest that the instinct of incubation, and that of parental love, are differentiated, the second not making its appearance till after the eggs are hatched. This, at first sight, seems likely, and then—if one considers it a little—unlikely, or, perhaps, impossible. It is from birth that the maternal love, the *στοργή*, dates, and birth, here, is represented by the egg. True, there is a second birth when the egg is hatched, which makes it possible that the true *στοργή* has waited for this. Yet the mother continues to brood upon the young in the same way that she has been doing on her eggs, and, except for the feeding, which does not commence immediately, the whole pretty picture looks so much the same that it is difficult to think a new element has been projected into it. No one, whilst the young are still tiny, could tell whether they or the eggs were being brooded over by the parent bird. An interesting point occurs here. When incubation is shared by the two sexes, the hatching of the eggs must frequently, one would think, take place whilst the male bird is sitting. What, then, are his feelings

when this happens? By what, if any, instinct is he swayed? If we suppose that the true στοργή dates, in the mother's breast, from the hatching of the egg, and the appearance of the formed young, does, now, a similar feeling take possession of the male? Does he too feel the στοργή, seeing that the young have been born from the egg, under his breast? If so, we could understand his subsequent devotion to the young, as shown by his feeding them with the same assiduity as the mother. But what, then, of the mother? She has been away at this second birth, so that if her psychology would have been affected, in any way, by the act—if it can be called an act—of hatching out the eggs, it ought not to be so affected now; she should be less a mother, in fact, than the cock. This, however—unless the eggs always are hatched out under the hen—is contradicted by facts, so that it seems plain that whatever special tie there may be between the female bird, as distinct from the male, and the young, must date from the laying of the eggs. But if this be so—and it seems the plain way of nature—what is it that makes the cock bird incubate? Is he moved by a feeling of the same nature, if weaker, as that which animates the hen, or has he, merely, caught the habit from her? The fact that some male birds leave the whole duty of incubation to the hen, and yet help to feed the young, seems to point in the latter direction, since imitation might well have acted capriciously, whereas one would suppose that feelings analogous, in their nature, in the two sexes, would show themselves at the same time. It would, however, be a stronger evidence for imitation, as the cause of the

parental activities of the male, were he to take his part in incubation, but leave the young to the female. I do not know if there is any species of bird, where the cock acts in this way. Perhaps it may be impossible to answer these, or similar, questions, but light might, conceivably, be thrown upon them by a more extensive knowledge of the relative parts played by the male and female bird in nidification, incubation, and the rearing of the young, throughout a large number of species. These, however, are not the questions with which ornithologists busy themselves. By turning to a natural history of British birds, one can always find how many eggs are laid by any species, their coloration—often illustrated by costly plates—and when and where the laying takes place; but in regard to the matters above-mentioned—or, indeed, most other matters—little or no information is forthcoming. One might think that such works were written for the assistance of bird-nesters only, and whether they are or not, that is the end which they, principally, fulfil. I believe, myself, that if the habits—especially the breeding habits—of but one species in every group or genus had been thoroughly studied, so that we knew, not only what it did, but how it did it, the result would make an infinitely more valuable work, even in regard to British birds only, than any now in existence, though all the other species were left out of it, and little or nothing was said about the number of eggs, their coloration, and the time at which they were laid.

If the male bird has only caught the habit of feeding the young from the female, we can the better

understand why, in so many species, the cock feeds the hen, and this without any reference to whether she is able or unable to feed herself. As the young birds grow up in the nest, they resemble their parents more and more, and it would be easier for the male to confuse them with the female, and thus take to feeding her too, or to transfer the habit from the one to the other, than it would be for the female, with a maternal instinct to guide her, to do the same by the male. Yet this, too, would be possible, and if, in any species, the female is accustomed to feed the male also, I would account for it in a similar way. This habit, on the part of the cock bird, has become, in some cases, a part of his ordinary courting attentions to the hen; and here, I believe, we have the true meaning of that billing, or "nebbing," as it is called, which so many birds indulge in at this season. This habit, with its grotesque resemblance to kissing, has always struck me as both curious and interesting, but one seldom, in works of ornithology, meets with a reference to it, much less with any attempt to explain its philosophy. Where birds, now, merely, bill, they once, in my opinion, fed each other—or the male fed the female—but pleasure came to be experienced in the contact alone, and the passage of food, which was never necessary, gradually became obsolete. I think it by no means improbable that our own kissing may have originated in much the same way; and that birds, when thus billing, experience the same sort of pleasure that we do, when we kiss, must be obvious to any one who has watched them. With pigeons, to go no further, the act is simply an impassioned one. It would be strong

evidence of the origin of this habit having been as I suppose, if we only found it amongst birds the young of which are fed by their parents. As far as I know, I believe this to be the case, but my knowledge does not enable me to speak decidedly, nor have I been able to add to it, in this particular, by consulting the standard works. Birds whose young are not fed from the bill, by their parents, are, as I think—for I am not certain in regard to all—the gallinaceous or game birds, the rapacious ones (*accipitres*), the plovers and stilt-walkers, the bustards, the ostriches, &c. In none of these, so far as I know, do the male and female either feed or "neb" one another—there is neither the thing, nor the form, or symbol, of it. Birds where there is either the one or the other, or both, belong, amongst others, to the crow, parrot, gull, puffin, tit or finch tribes, and all these feed the young. In the grebe family, too, the two customs obtain, but whether they are combined in any one species of it, I cannot with certainty say. It would not, of course, follow that a bird which fed its young, should, also, feed its mate, or that the pair, when caressing, should seize each other's bills; but is there any species belonging to those orders where the chick shifts for itself, as soon as it is hatched, or, at the least, does not receive food from the parent's beak or crop, which does either, or both, of these things? In conclusion, I can only wonder that a habit so salient, and which, to me, seems so curious—especially in the case of the caress merely, for a caress it certainly is—should not, apparently, have been thought worth consideration—hardly, even, worth notice. Of all beings, man,

alone, is supposed to kiss. Birds, I assert, do, in the proper and true meaning of the word, kiss, also, and I believe that the origin of the custom has been the same, or approximately[1] the same, in each instance. To take food from one's mouth, and put it into some one else's, is an act of attention, I believe, amongst some savage tribes.

I am not quite sure, now I come to think of it, that the hen wagtail does do all the incubation—as I said, some lines back, she did—but I think that this is the case, as when I watched a pair I never saw the two birds together, either at or near the nest, and only once in the neighbourhood of it, all the time the eggs were being hatched. The nest, in this case, had been built, very prettily, in the last year's one of a thrush, which it quite filled, and which made a splendid cup for it. It was interesting to see the hen bird at work. Each time, after flying down from the ivied wall of my garden, in which the nest was situated, she would feed, a little, making little runs over the lawn, after insects, with often a little fly, but just above the grass, at the end of the little run, the tail still flirting up and down. Then she would fly off for more materials, appear on the lawn, again, in a few minutes, with some in her bill, run, with them, to under the wall, fly up into the ivy, and, upon coming out, go through it all again. Thus, the wagtail makes building and eating alternate with one another, unlike the house-martins, which build, says White, "only in the morning, and dedicate the rest of the

[1] Something, that is to say, of a *utilitarian* nature. One should watch monkeys also.

day to food and amusement." The yellow, widely-gaping bills of the fledgling wagtails, as they hold their four heads straight up, in the nest, together, look just like delicate little vases of Venetian glass, made by Salviati; or, treating them all as one, they resemble an artistic central table-ornament, of the same manufacture. It is the inside that one sees. Just round the edge, is a thin rim of light, bright yellow, whilst all the rest is a deep, shining gamboge —not as it looks when painted on anything, but the colour of a cake of it—"all transfigured with celestial light." No prettier design than this could be found, I am sure, for a beaker. Wagtails—I am speaking, always, of the water-wagtail—collect a number of flies, or other insects, as they run about, over the grass, before swallowing them, or flying, with them, to feed their young—that pretty office, which has been dwelt upon only from one point of view. Marry! when a tigress carries off a man to her cubs, and watches them play with him—an account of which, I believe a true one, I have read—we see it from another, such shallow, partial twitterers as we are. There is as much of beneficence in the one thing, I suppose, as the other—the flies, at least, would think so, creatures that, but a moment ago, were as bright, happy, and ethereal as the bird itself—their tiger.

> "Oh yet we trust that, somehow, good
> Will be the final goal of ill."

Why, yes, one must go on trusting, I suppose (nothing else for it), but meanwhile one of this pair of wagtails has a good-sized something in

his bill, to which he keeps adding, and as he sometimes, also, drops a portion of it, and again picks it up, it must be composed of a number of different entities. This living bundle he deposits, after a time, on the lawn, and then eats it piecemeal, after which he runs over the grass, making little darts, and eating at once, on secural. Shortly afterwards, however, I see him, again, with such another fardel, and with this he keeps walking about, or standing still, for quite a long time, without swallowing it—indeed, he has now stood still for so long that I am tired of watching him. This is interesting, I think, for as I have never seen birds collect insects, like this, except when young were in the nest, I have no doubt this wagtail's idea is to feed his. But, first, his own appetite prevents him from doing so, and, then, it is as though there were a conflict between the two impulses, producing a sort of paralysis, by which nothing is done. I make sure that this is the male bird; but now appears the other—the female, "for a ducat"—carrying what I can make out, with the glasses, to be a bundle of flies, to which she keeps adding, and, shortly, she repairs, with them, to the nest. The male now comes again, and runs about, collecting a similar packet; and I can notice how, sometimes, he is embarrassed to pick up one fly more, without losing any he has, and how he secures it, sometimes, sideways in the beak, when he would, otherwise, have made a straightforward peck at it. Not only this, but, with his beak full of booty, he will—I have just seen him—pursue insects in the air. Whether he secures them, under these circumstances, I cannot, with assurance, say, but

he turns and zigzags about, as does a fly-catcher, and certainly seems to be doing so. There is the attempt, at least, and would he attempt what he was not equal to? I have no doubt, myself, that he performs this feat, and yet what a wonderful feat it is! Both birds now feed the young—for the female has been collecting, for some time, again. Now, instead of, or besides, flies, each bird has in its bill a number of long, slender, white things, which hang down on each side of it, and must, I think, be grubs of some sort, though I do not know what. But stay—beneficence again!—are they—not flies in their entirety indeed, but—oh optimism and general satisfactoriness!—fly entrails, protruding, bursting, hanging, forced out by the cruel beak? Yes, that is it, it is plain now—too plain—and some of the flies are moving. I have seen a wasp tear open and devour a bluebottle—a savage sight—and it looked something the same. But all hail, maternal affection!—and appetite! to bring in the wasp. "Banquo and Macbeth, all hail!"

I believe that most birds that feed their young with insects brought in the bill, collect them in this way. Indeed the habit is common throughout the bird-world, and may be observed, equally, in the blackbird or thrush, with worms, and in the puffin, with fish—in this last case, perhaps, we see the feat in its perfection. The smallest of our woodpeckers I have watched bringing cargo after cargo of live, struggling things to his hole, but the green woodpecker, for a reason which, for aught I know, I shall be the first to make known, does not do this. From behind some bushes which quite hid me, and which commanded the nest, I have watched the

domestic economy of two pairs of these birds as closely as, in such a species, it well can be watched. The glasses, turned full upon the hole, I fixed on a little stick platform, just on a level with my eyes, as I sat. Thus no time was lost in getting them to bear, but the instant one of the birds flew in, I had it, as it were, almost upon the platform in front of me. In this luxurious manner I have seen scores and scores of visits made to the nest, but never once, before the bird made its entry, through the hole, have I been able to detect anything held by it in the beak, which was always fast closed. Had anything in the shape of an insect projected from it, I must certainly have seen it, but this was never the case, and I can, therefore, say with confidence, that the green woodpecker does not feed its young by bringing them insects in its bill, as does the lesser spotted, and, no doubt, the greater spotted one also—all the woodpeckers, probably, that have not changed their habits, in relation to their food and manner of feeding. I am the more sure of this, because, as the little woodpecker collected a number of insects, each time, there can be little doubt that the green one would do this, likewise, were he accustomed to feed the young in the same way. How, then, does he feed them? I give the answer from my notes.

"At 12.10 the male woodpecker flies to the hole, and, almost immediately, enters. In a few minutes he looks out, cautiously, turning his head from side to side. I can make out nothing in the bill, but I notice that he works the mandibles, just a very little. Then he draws in his head, but projecting it, again, almost immediately, something is now evident,

protruding from the mandibles, on both sides. It is white, brilliantly white, and looks like a mash of something. It reminds me of what I have seen oozing or flowing from the bills of rooks, as they left the nest after feeding their young—but even whiter, it seemed, as the sun shone on it. Insects it does not in the least resemble, except, by possibility, a pulp of their white interiors. If so, however, it must represent multitudes of them. But where are the wings, legs, and crushed bodies? It is formless, and seems to well out of the bill." On a subsequent occasion, I saw the same outflow—"a thick, milky fluid," I this time describe it as—from the bill of the female; so that, principally through this, but, also, because of many other little indications, such as that working by the bird of its mandibles—as before noticed—in leaving the nest, and an occasional little gulp or less pronounced motion of the throatal muscles, as though it were swallowing something down, the head being at the same time raised, I came to the conclusion that these woodpeckers feed their young by some process of regurgitation. This confirms an opinion which has long been gaining ground with me, viz. that the green woodpecker is now almost wholly an ant-eater. Here, at least, where the country is open and sandy, and where, till lately, there has been a great and happy dearth of posts and palings, I believe that this is the case. I have often watched the bird, in trees, and have seen it give, now and again, a spear with the bill against the trunk; but this has never been continued for long, and that eager and absorbed manner which a bird has when actively feeding, has never, in my

experience, gone along with it. I doubt, myself, whether insects are really secured on these occasions, for there is something so nonchalant and lazy in the way the stabs are delivered, that they have more the appearance of a mere habit than of a means to an end. Sometimes there is a little more animation, but it soon flags, and the bird desists and sits idle. Very different are its actions, and its whole look and appearance, when feeding on the ground. Now its interest—its *keenness*—is manifest, whilst a certain careful, systematic, and methodical way of proceeding, shows it to be occupied in the main daily business of life. There are four clearly marked stages in the process by which a green woodpecker extracts ants from the nest. First there is a preliminary probing of the ground, the beak being inserted—always, I think, in the same place—gently, and with great delicacy—tenderly as it were, and as Walton would recommend; next comes a sharp, quick hammering, or pickaxing, with the beak, into the soil, after which the bird throws the loosened earth from side to side, with so quick a motion that the head seems almost to move in a circle. Finally, there is the quiet and satisfied insertion of the bill, many times in succession, into the excavation that has been made, followed, each time, by its leisurely withdrawal. At each of these withdrawals the head is thrown up, and the bird seems to swallow down, and enjoy, what it has just been filling its beak with—as no doubt is the case.

The greater part of both the morning and afternoon seems to be spent by these woodpeckers in thus depopulating ants' nests, so that the negligent

and desultory nature of any further foraging operations, which they may carry on amongst the trees, is amply accounted for. The bird is full of ants, which it has been swallowing wholesale, without any effort of searching. It cannot still be hungry, and, when it is, it will repair to those Elysian fields again. The tree, in fact, is now used more as a resting-place than for any other purpose, except that of breeding; and thus this species, with its marvellous tongue, specially adapted for extracting insects from chinks in the bark of trees, is on the road to becoming as salient an instance of changed habits, as is Darwin's ground-feeding woodpecker, in the open plains of La Plata. Sure I am that here, at any rate, the green woodpecker feeds, almost wholly, upon ants, but if there be a doubt on the matter, ought not the contents of the excrements to decide it? I have examined numbers of these, which were picked up by me both in the open and at the foot of trees, and, in every case, the long narrow sac, of which the outer part consists, was filled, entirely, with the remains of ants. These I have turned out upon a sheet of white paper, and examined under a magnifying glass, but I have never been able to find the smallest part or particle of any other insect. This has surprised me, indeed, nor is it quite in accordance with the contents of other excrements which I have looked at in other parts of the country—for instance in Dorsetshire. There, the shards of a small beetle were sometimes mixed, in a small proportion, with the remains of the ants, and, once or twice, these formed the bulk of the excrement. These shards, however, seemed to me to be those of a

ground-going species of beetle. What I have called the remains of the ants, contained in these excrements, were, or seemed to be, almost the whole of them—head, thorax, abdomen, legs, &c.—everything, in fact, except the soft parts, and juices of the body. Whether these, in the bird's crop or stomach, would help to make a white milky fluid I do not know, but I think that they must do.

If the great staple of the green woodpecker's food has come, now, to consist of ants, as I am sure is the case, the reason of its feeding its young, not as do other woodpeckers—the lesser spotted one, for instance—but by regurgitation, is at once apparent. Ants are too minute to be carried in the beak, and must, therefore, be brought up *en masse*, if the young are not to starve. We might, therefore, have surmised that, if ants were the sole or chief diet, the young must be fed in this way, and the fact that they are fed in this way is evidence of the thing which would account for it. In the green woodpecker we have an interesting example of a species that has broken from the traditions of its family, and is changing under our eyes; but it does not seem to attract much attention—only the inevitable number of the eggs, their colour, the time at which they are laid, &c. &c.

These woodpeckers must mate, I think, for life—as most birds, in my opinion, do—for they nest in the same tree, year after year, and go in pairs during the winter. It is very interesting, then, to see a pair resting together, after they have had their fill of ant-eating. First, one will fly into the nearest plantation, or small clump of trees, on the trunk of one

of which it alights, and there clings, motionless. Shortly afterwards, the other comes flying in, perhaps with the wild laugh, but, instead of settling on the same tree, it chooses one close beside it, and there, side by side, and each on its own, the two hang motionless for a quarter of an hour, perhaps, or twenty minutes. Then, suddenly, there is a green and scarlet flash, as one flies off. The other stays, still motionless, as though she cared not. "Let him e'en go"—but, all at once, there is another flash, and she is gone, too, with equal suddenness—the dark trees darker without them. I have, more than once, seen a pair resting, like this, on two small birches, or firs, near each other, each about the same height from the ground, quite still, and seeming to doze. It seems, therefore, to be their regular habit, as though they did not care to sleep on the same tree, but preferred adjoining rooms, so to speak. The birds' tails, when thus resting, are not fanned out, and although they are, sometimes, pressed against the tree, at other times they will not be touching it at all, so that the whole weight is supported by the claws, evidently with the greatest ease. I have taken particular notice of this, and from the length of time that a bird has sometimes remained, thus hanging, and the restful state that it was, all the while, in, I cannot think that the tail is of very much value as a support, though stress is often laid upon its being so. I do not know how it is, but a little close observation in natural history will give the lie to most of what one hears or reads, and has hitherto taken for granted. It all looks very plausible in books, but one book, when you ever do get hold of

it, seems to disagree with all the other books, and that one is the book of nature.

There is another point, in which the green woodpecker either differs from its family, or shows that its family has not been sufficiently observed. I have read, somewhere—I am not quite sure where, but it was a good work, and one of authority—this sentence: "Some birds, such as woodpeckers and (I forget the other) are supposed never to fight." I can understand how this idea has got about, because thrushes, which are commoner birds than woodpeckers, and easier to watch, are, also, thought not to fight. Of the thrush, and his doughty deeds, of an early morning, I shall have no space to speak in this volume, but I here offer my evidence that the green woodpecker, at any rate, is "a good fellow, and will strike." As, however, I shall have to quote, at some length, from my notes, I will defer doing so to the following chapter. Perhaps I shall be saying a little too much about the green woodpecker, but let it be taken in excuse that, feeling all his charm, and having made a special study of him, I yet say less than I know.

GREEN WOODPECKER

CHAPTER IX

IT was on a 13th of April, that, having spent some hours in the woods, to no purpose, I at length climbed the hill, up which they ran, and came out upon a smooth slope of turf, from which I had a good view down amongst the trees, which did not grow very thickly. As I emerged, I saw a woodpecker feeding on the grass, and shortly afterwards two, pursuing each other, flew down upon it, from the wood, but, seeing me, flew back again. It instantly struck me that here was an ideal spot to study the habits of these birds. A penetrable wood which was evidently haunted by them, to look down into, an open down right against it, and good cover, from which I had an equally good view of both. I, therefore, ensconced myself, and soon had the pleasure of making some observations new to myself,

and, as far as I know, to ornithology. These two same birds that I had startled pursued each other about amidst the trees, for some time, uttering not only their usual cry—unusually loud as I thought —but another, of one note, quickly repeated, like "too, too, too, too, too," changing, at the end, or becoming modulated, into "too-i, too-i, too-i, too-i, too-i." All at once two other ones flew out from the enclosure, and, alighting together upon the greensward, a curious play, which I took to be of a nuptial character, commenced between them. They both half extended the wings, at the same time drooping them on to the ground, and standing thus, fronting each other, they swung not only their heads, but the upper part of their bodies, strenuously from side to side, in a very excited manner. If there was any upshot to this, I did not see it, as the birds shifted a little so as to become hidden by a ridge, and the next I saw of them was when they flew away. A little while after this, I saw either the same or another pair of green woodpeckers, pursuing each other from tree to tree, and, all at once, they closed together, in the air, as though in combat; almost immediately, however, separating again and flying to different trees. Soon they came down on to the turf, and were probing it for ants, when one of them, desisting from this occupation, went close up to the other—they had been near before—and, again, went through the action which I have just described. Now, I saw that it was a hostile demonstration, but the bird against whom it was directed seemed in no hurry to respond to it, and merely went on feeding. At length, however, he turned, and went through

with it also, and the two then fought, jumping and pecking at one another. It was not, however, a very bloody combat. It seemed, I thought, rather half-hearted, and I particularly noted that the bird which had been challenged soon left off, and began to feed again, on which his opponent desisted also, making no attempt to take him at a disadvantage, which, it seemed, he could easily have done, any more than he had in the first instance.

This chasing and coming down on to the grass, to feed and skirmish, continued during the afternoon, but there were two fights which were of a fiercer and more interesting character. I have spoken, before, of these woodpeckers' upright attitude, when they fronted each other, swinging their heads from side to side. This, however, was not at all the case here. Instead of standing upright, they sat crouched —almost lay—on the ground, with their wings half-spread out upon it, and in this position—beak to beak—they jerked their heads in the most vivacious manner, each one seeming to meditate a deadly spear-thrust. Then there were some quick mutual darts, of a very light and graceful nature, and, at last, each seizing hold of the other's beak, they pulled, tugged, jumped, and dragged one another about, with the greatest violence. One might suppose that each bird sought to use his own beak as a weapon of offence, in the usual manner, and seized his adversary's, as it were, to disarm him, and that, then, each tried to disengage, but was held by the other. In the second and still more violent encounter, however, I noticed a very curious feature. After the first light fencing, the birds

seemed to lock beaks gently, as though by a mutual intention to do so, and, indeed, so markedly was this the case that, for a moment, I thought I must have been mistaken, and that, instead of two males, they were male and female. Then, the instant they had interlocked them, they set to pulling, with a sudden violence, as though the real serious business had now commenced. They pulled, tugged, and struggled most mightily, and each bird was, several times, half pulled and half thrown over the other's back, springing up into the air, at the same time, but neither letting go, nor being let go of. There was a good bout of this before they became separated, after which some fierce pecks were delivered.

As with some other actions, performed by various birds, when fighting, so, here, with these woodpeckers, I believe that the locking of the bills has been such a constant result of the necessities of the case, that it has now passed, or is passing, into a formal thing, without which the duel could hardly be fought. The birds lock them—so it seems to me—almost as we put on boxing-gloves, or take the foils, and, after this, tug and pull, not so much with the object of getting free, as because this has become their idea of fighting. The fight, in fact, must proceed in a formal routine, and without this, either combatant is at a loss. How else is it that neither bird seems able to begin the fight unless the other fronts him, nor to take—as I have noticed in other cases—an advantage of his adversary, by springing upon him, unawares? In the first combat, for instance, the one bird fed quietly, whilst the other moved his

head in the orthodox manner, just beside him, and it was not till the feeding one responded, by doing the same, that hostilities went further. Equally apparent was it that the challenged bird felt himself quite safe, as long as he did not take the matter up, by going through the established form. Again, this throwing of the head from side to side, which seems to represent the attempt of either combatant to avoid the beak of his adversary, has, likewise, become more or less stereotyped, for not only may the one bird act in this way, whilst the other is feeding, as we have just seen, but even when both do, as we shall see directly, they may be at such a distance from one another as to make the action a quite useless one. On the other hand, when the two stand beak to beak, and commence a spirited fight, in this manner, the object and rationale of the movement seems as obvious as it can be. We see, here, the swords actually crossed, whilst, in the other cases, the birds fence at a distance, or the one without the other, and this is so obviously formal, that, for myself, I doubt the motive of the same movement, even where it seems most apparent. What I last saw will, still further, illustrate these points. A woodpecker that had been quietly feeding by itself, at some distance from any other one, began, all at once, to move its head about in this way, in a very excited manner, and to utter a little, sharp, twittering cry, being one note several times repeated. I then saw that another woodpecker was advancing towards him, with precisely similar gestures, though, as yet, he was a good way off. As he came nearer, the threatened bird first retreated, and

then, again, returned, until the two stood fronting one another, some two or three feet apart, continuing, all the while, to swing and jerk—for it is a combination of the two—their heads and bodies to this side and that, as in every other instance. Thus they continued, for some little time, neither increasing nor decreasing the distance between them, after which there were several half retreats, whereby the one bird, passing the other obliquely, exposed itself to a flank attack, its beak being turned away. This, however, was never taken advantage of by the other, and, finally, the more timid of the two made a low flight over the grass, to some distance, thus declining the combat. Some other odd motions and contortions were exhibited by these birds, but they were occasional, and, I think, unimportant, whereas the main one was constant, and the keynote of all. In this last instance, as at the first, both birds held themselves upright, with their heads thrown up, which gave them a half absurd, and wholly indescribable appearance.

We see, in these cases, a certain fighting action, which can only be of use when the birds are at the closest quarters—in actual contact, that is to say—performed, either by both of them, when at a considerable distance one from another, or by one only, when the other is paying no attention to, or does not even see him. How shall we define such an action, performed in such a way? To me it appears to be a formal one—so much a necessity, that is to say, under a certain mental stimulus, that its original end and object is becoming merged in the satisfaction felt by the bird in going through with it. It

is on the way to becoming an ultimate end, instead of only a proximate one. Intelligence would lapse in such a process, but it might revive again, as I believe, under the influence of natural selection. I should record, however, in connection with the above remarks, that at the end of the most violent fight the bills of the birds became disengaged. It then became more of a rough and tumble—a παγκρατιον—between them, and I noticed that one did, then, dart upon and peck the other, from behind. In other cases, too, I have remarked that when fighting birds once close and grapple, formality is at an end. What has struck me as peculiar, is the way in which they will *not* close, but seem content to make, over and over again, certain movements that have an oddly stereotyped and formal appearance. Here, as it appears to me, we see the hardening of the surface of the lava-stream, above the molten fluid beneath. Through this cooled crust the latter must be reached; but the lava-stream may become all crust, and the battle lose itself in formality.

The time during which I watched from my bush, and in which all these doings were included, was about four hours—from 3, or thereabouts, to 7 namely—and during the whole of it, woodpeckers, when not thus fighting, fed quietly upon the greensward, probing and hammering it with their bills for the ants. What a terrible calamity to fall upon thousands of such little intellectual entities! Fancy the same sort of thing happening to ourselves—a monster, of landscape proportions, trundling down London, say, or Pekin, and englutting everybody—philosophers

and cricketers, honest men and thieves, quiet peaceable people and Cabinet Ministers—dozens at a time! Would that change our ideas, at all, I wonder? Would it modify popular conceptions of the Deity? Would it make optimists less assured, pessimists less "shallow"? Or would it do nothing? Would Tennyson, till he was gobbled, still go on "trusting"? and would the very thing itself, that appeared so all wrong, be taken as evidence that it was, really, all right? This last, I feel sure, would be the case. How many a song has been sung to that old, old tune, and what a mass of such "evidence" there is! Historians are never tired of it—the Hunnish invasion, the end of the Peloponnesian war, the conquest of everybody by Rome, and then, again, the conquest of Rome by everybody: all right, all for the best, if you start with being an optimist, that is to say, with a cheerful constitution—a good thing, certainly, but mistaken by many for a good argument. True it is that disasters, almost, or even quite, as great as the above, do sometimes overtake humanity, upon this earth of ours; but they are, both, less frequent, as I suppose, than with the ants, and the great difference is, that, with us, there is no woodpecker, its part being taken by inanimate nature, or by ourselves, to whom we are partial. Yet I know not why a scheme that is well for one, or for a few only, should be thought a good scheme, all through, and the reason why we, as a species, are not as ants to woodpeckers, is not that nature is too pitiful, but that we are too strong, and woodpeckers not strong enough—which is not a satisfactory reason.

An eminent naturalist and spiritualist thinks that immortality (of one species only, apparently) with eternal progress, would justify all, and turn seeming wrong into right. For myself, I cannot see how one single pang, upon this earth, can ever be justified, seeing that, on any adequate conception of a deity, it both never need, and never ought to have been felt. This very progress, too, with which we are to comfort ourselves, must be accompanied with—indeed is made dependent upon—great, almost infinite, suffering, lasting through enormous periods of time. The sin-seared soul does, indeed, rise, at last, and become purified—but through what? Through the horrible tortures of remorse. That, no doubt, is better than another view. It is the best, perhaps, that can be conceived of, things being as we know them to be. It makes the best of a bad job—but there is still the bad job. The eternal stumbling-block of evil and misery remains. If these need not have been, where is all-goodness, seeing that they are? If they need, where, then, is infinite power, and where, without it, is justice? I do not say that these questions cannot be satisfactorily answered (though I think they never will be by us, here), but I say that the spiritualistic doctrine does not answer them. Numbers of other difficulties, more graspable by our reason, appear to me to attend the conception of spiritual progress, and especially of spiritual suffering, in a future state, as taught by many spiritualists—say by the late Stainton-Moses; but perhaps a discussion of these does not, strictly speaking, fall within the province of field natural history.

Revenons à nos moutons, therefore. The green woodpecker, we have now seen, both fights and has a marked manner of doing so, which seems better adapted to the ground than to trees, where one would, *primâ facie,* have expected its combats to take place. The birds stand directly fronting one another, but to do this upon a tree-trunk, or a branch that sloped at all steeply, they would have to stand, or rather cling, sideways, since they never—that is to say, I have never seen them—descend head downwards, though they do backwards, or backward-sideways, with ease. Such duels, therefore, as I have here described, would have to be fought upon a horizontal branch, but neither would this, perhaps, be very convenient, or much in accordance with the bird's habits. The ground alone—especially the greensward—would seem quite suitable for such tourneys, and since they are sometimes held there, the probability, to my mind, is that they always, or nearly always, are. Nor is this all, for the nuptial rite itself is performed by these woodpeckers upon the ground—a strange thing, surely, in a bird belonging to so arboreal a family. Here, again, I will describe what I have seen, for, the next day, I came to watch in the same place, getting there about 7 in the morning, from before which time—for they were there when I came—up to 8.30, when I left, three or four birds—the same ones doubtless—fed quietly on the green. In the afternoon I came again, and whilst watching one that was still feeding busily, another flew down, some way off it, and after considering the ways of the ant, for a little, and being wise in regard to them, came up in a series of rapid

hops and short pauses, till just in front of the feeding bird—a male—when she crouched down, and pairing took place. It was accompanied—at least I think so—by a peculiar guttural note, uttered either by one or both the birds. Some time afterwards I again saw this. I am not sure whether it was the same pair of birds as before, but the actions and relative parts played by the male and female were the same. In either case the male was the more indifferent of the two, and had to be courted, or rather solicited, by the female—a fact which I have noted in various birds, and which does not appear to me to accord very well with that universal law of nature, as laid down by Hunter and endorsed by Darwin, that the male is more eager, and has stronger passions than, the female. No doubt this is the rule, but the exceptions or qualifications of it do not seem to me to have received sufficient attention. These woodpeckers could not have been long mated—except that in my opinion they mate for life—since the males were fighting desperately only the day before.

Let the fighting of male birds be ever so strong evidence of their sexual desires, yet the actual solicitation of either sex by the other must, surely, be a stronger one, and this, as we have just seen, is not always on the side of the male. Darwin gives several instances of female birds courting the male, contrary to the general rule in the species to which they belonged, and many more might be collected. Amongst pigeons it is not an unknown thing for married happiness to be disturbed by the machinations of a wanton hen: the male gull is often quite

pestered by the affectionate behaviour of the female: and at the very same time that the male eider-ducks are constantly fighting, and often quite mob the females, one may see one of these females go through quite frantic actions, on the water, first before one male, and then another, which actions, though they seem to point all in one direction, yet meet with no response. Yet the eider-duck is one of those birds the male of which is highly adorned, and the female quite plain. There is, I think, a strong tendency to ignore or forget things which are not in harmony with what seems a plain, straightforward law, that one has never thought of doubting. But every fact ought to be noted and its proper value accorded it. The sexual relations of birds are, I think, full of interest, and it is, particularly, in regard to those species, the sexes of which are alike, or nearly so, that these ought to be studied. There is a distinct reason, as it appears to me, why, in the contrary case, the males should be the more eager, which reason does not exist in the other, and it is just in this other, where one cannot, as a rule, in field observation, tell the male from the female, that it is most difficult to know what really goes on. Fighting amongst male birds, in whatever fact—physical or psychological—it may have originated, is, in itself, distinct from the sexual passion, and in it, moreover, a large amount of energy is expended. It seems just possible, therefore, that some male birds, as they have become more and more habitual fighters, have, owing to that very cause, lost, rather than gained, in the strength of the primary sexual impulse, whereas the female, having nothing to divert her from this, may

be, really, more amorous, and more the wooer, sometimes, than one thinks. No doubt this would, in time, lead to fighting amongst the females too, and I have seen two hen blackbirds fight most desperately, on account of a cock that stood by. Rival women, however, do not fight, and the same general principle might show itself amongst birds, the hens contending, rather, with enticements, allurings, and general assiduity, which, again, need not pass into a formal display. Eagerness, in fact, might show itself in a way more consonant with the feminine constitution, and therefore less easy to observe.

Be all this as it may, the female woodpecker, in the above two instances, was certainly the *agente provocatrice*. I saw no more fighting, either on this day, or afterwards. It seemed as though I had been just in time to see the birds' mating arrangements settled. But since these woodpeckers go in pairs, during the winter, and build, each year, in the same tree, they must, I think, be assumed to mate for life. Why, therefore, should the males fight, each spring?—and the same question may be asked in regard to hundreds of other birds. Does not this, in itself, go to show that such fighting may not always stand in such direct relation to the sexual passions as one is accustomed to think that it does? But to leave questions and come to facts, the habits of our green woodpecker are, already, very different, in several by no means unimportant respects, from those of the family to which it belongs. Its general —and in some parts of the country, as I believe, its almost exclusive—diet is, now, ants, which it procures on the ground, by digging into their nests.

As the ants are too small for it to hold in its bill, it is obliged to swallow them, and this has led to its feeding the young by a process of regurgitation, as does the nightjar, owing, I believe, to a similar reason. In the breeding season the males become pugnacious, and fight in a specialised manner, also on the ground, and here, too, the marriage rite is consummated. From this to laying the eggs in a hole, or depression, of the earth—a rabbit-burrow, for instance, as does the stockdove, though still sometimes building in trees, as it, no doubt, once always did—does not appear to me to be a very far cry, and I believe that, if trees were to disappear in our island, the green woodpecker, instead of disappearing with them, would stay on, as a ground-living species, entirely. On one point of the bird's habits I have not yet satisfied myself. Does it pass the entire night, clinging, perpendicularly, to the trunk of a tree—sleeping like this? From what I have seen, I believe it does, and this, sometimes, without the support of its tail. But I am not sure, and should like to make sure. How I should love to watch a pair of green woodpeckers, settled, for the night, on their two trees—as I have seen them resting — till darkness made it no longer possible to do so, and then to creep silently away, and come as silently again, before daylight, on the following morning! How sweet to steal, thus innocently, upon their "secure hour": to see them commence the day: to watch their first movements: to hear their first cries to each other: to sit and see the darkness slowly leave them, till a grey something grew into a bird, and then

another, both clinging there in the very same place and position you had left them in overnight! Then to watch them off; and returning, once more, on the same afternoon, well in time, to see if they came back to the same trees, or not! To be able to do this—and a few other things of this sort—without a world of cares to distract one—

"Ah, what a life were this! how sweet! how lovely!"

MARTINS BUILDING NEST

CHAPTER X

SHAKESPEARE'S "guest of summer, the temple-haunting martlet," makes "his pendent bed and procreant cradle," year after year, on the flint walls of my house in Icklingham, thus offering me every facility for a full observation of its domestic habits. For long I have been intending to make these a study, but the very proximity which seemed to be such an advantage, has proved a hindrance; for it is one thing to steal silently into a lonely plantation, or lie, at full length, on the wild waste of the warrens, and another to sit in a chair, in one's own garden, or look out of a window in one's own house. So, though the martins were always most interesting, I never could keep long near them; yet some very inadequate notings, forming a scrappy and widely-sundered journal, I have made, and will

here give in their entirety, since they concern a bird so loved.

"*May* 25, 1900.—This morning I watched a pair of martlets building their nest against the wall of my house.

"5.55.—Both birds fly to the nest, and one, that is much the handsomer and more purple of the two, makes several pecks at the other, in a manner half playful, half authoritative. I take this one to be the male, and the other, who is greyer, the female. She, in return for her husband's friendly pecking, cossets him, a little, with her beak, nibbling his head. Neither of the two are working at the nest. The throat of the male seems very much swelled, yet he deposits nothing, and, in a little while, flies off, leaving the female, who, however, soon follows him. The male, as I believe him to be, now comes and goes, several times. Each time, he just touches the edge of the nest with his bill, flying off almost immediately afterwards, nor can I discover that he adds to the mud of it, on any one occasion.

"6.10.—Now, however, he has put—is still putting—a little piece there. Bending down over the nest's edge, which he just touches with his bill, he communicates a little quivering motion to his head, during which, as it would seem, something is pushed out of the beak. I cannot make out the process, but now that he is gone, I see a little wet-looking area, which may be either fresh mud that has just been brought, or a moistened bit of the old. I think, however, it is the first. Now, again, he comes as before, flies off and returns, and thus continues, never bringing anything in the

bill that I can see, but, each time, giving himself a little press down in the nest, and, simultaneously, stretching his neck outwards, and a little up, so that the rounded, swollen-looking throat just touches its edge. After doing this twice or thrice, he makes a dip down, out of the nest, and flies off. I can never make out that he either brings or deposits anything. The other bird comes, also, two or three times, to the nest, but neither does she seem to do anything, except sit in it and just touch its edge with her bill. One bird, coming whilst the other is thus sitting in the little mud cradle, hangs, fluttering, outside it, for awhile, with a little chirrupy screaming, and then darts off. There must have been, by now, a dozen visits, yet the birds, apparently, bring nothing, and do little, or nothing, each time. Another visit of this sort, the bird just touching the rim with its swollen throat—not the beak—and then dropping off—a light little Ariel. And now another: and, this time, the partner bird hovers, chirruping, in front of the nest, as the first one lies in it—but nothing is brought, and nothing done that I can see. It now seems plain that, for some time during the nest-building—or what one would think was the nest-building—the birds visit the nest, either by turns, or together, yet do nothing, or next to nothing, to it. Two more of these make-believes, but now, at last, mud is plainly deposited by the visiting bird; but I cannot quite make out if it is carried in the bill, or disgorged out of the throat.

"6.50.—Both birds to the nest. One has a piece of mud in the bill, which it keeps working about.

Yet it is half in the throat, too, it would seem, and often as though on the point of being swallowed. At last, however, it is dropped on the rim—that part of it so often touched. Then the bird begins to feel and touch this mud, and I see a gleam of something white between the mandibles, which, I think, is the tongue feeling, perhaps shaping, it. The other bird now flies off, and I see this one, quite plainly, pick up a pellet of mud and swallow it. This, with the swollen and globular-looking throat, which I have kept remarking, seems to make it likely that the mud used in building is swallowed and disgorged. Another visit, now, but I cannot quite make things out. I see a bit of mud held in the beak, and after, if not before, this, the bird has made actions as though trying to bring up something out of its throat. However, I cannot sit longer against the wall of my own house.

"26*th*.—At 6 A.M. one of the martlets comes to the nest, and, as he settles down upon it, he utters notes that are like a little song, and very pretty to hear. Lying, thus, in the nest, he just touches the edge of it with the beak, but, though the throat looks quite globular, no mud, that I can see, is deposited. He shifts, then, so as to lie the opposite way, and, soon after, flies off, making his pretty little parachute drop from the brink, as usual. Soon he returns—for I watch him circling—and stays a very short time, during which no mud is deposited. The nest, too, I notice, seems to have advanced very little since I left it yesterday, though this was no later than 7 A.M. Another musical meeting, now, and the arriving bird, finding the musician on the nest,

clings against it, and there is a sort of twittering, loving expostulation, before she leaves him in possession. This second bird is not nearly so handsome, the back not purple like that of the other, and the white throat is stained and dirty-looking. It is this one that swallowed the mud yesterday, and, I think, does the greater part of the work—the hen, I feel pretty sure. During another visit, the bird applies its bill, very delicately, to the mud-work of the nest—always its edge or parapet—and there is that quick, vibratory motion of the whole head, which I have before mentioned. It appears to me that, during this, mud must be deposited, but in such a thin, small stream, that I can see nothing of it. Sparrows —out on them!—have taken possession of the first-built of my martins' nests, and the dispossessed birds —if they are, indeed, the same ones—have commenced another, close beside it. But I must go."

Gilbert White, in his classic, alludes to the slow rate at which house-martins build, and also gives a reason for it. He says: "About half an inch seems to be a sufficient layer for a day." To me it seems that, at some stage of the construction, they must build even slower than this, and the curious thing is, that, at the proper building-time, and when, to casual observation, the birds seem actively building, they come and come and come again, and yet do nothing, each time. Well, "*tempora mutantur, et nos mutamur in illis*," but it is pleasant to think that all this was going on in White's days, on the walls of his house, no doubt, as of mine now. When everything else has been swept away, yet in nature we still have some link with past times. These

martins, the rooks, a robin, any of the familiar *homy* birds, can be fitted into any home, with any person about it. Yet that is not much—or rather it is too difficult. Let any one try, and see how far he gets with it.

"*May* 17, 1901.—These birds may have inter-communal marriages—or something a little *outré*. There are the nests of two, under the eaves of one wall of my house, and their owners go, constantly, from one of them to another, entering both. When I say 'constantly,' I mean that I have seen it several times. There was always another bird in the nest from which the one flew, and sometimes, if not always, in the one to which he went. Thus there are three birds to the two nests, for I cannot make out a fourth. Also there is entire amicableness, for the same bird, when it enters each nest, in turn, is received with a glad twitter by the one inside. What, then, is the meaning of this? Are two hens mated with one male bird, and has each made a nest, at which he has helped, in turn? Or is there a second male, not yet flown in, but who will resent the intrusion of the other, when he does? *Nous verrons*. It is one of these two nests that is in process of being taken possession of by the sparrows; for the deed is not done all at once—'*nemo repente fuit turpissimus*.' A martin is in this one, now, when the hen sparrow flies up, and, as she clings to the entrance, out he flies. She fastens upon him, and keeps her hold, for some time, in the air. The martin, as far as I can see, makes no attempt to retaliate, but only flies and struggles to be loose. When he is, his powers of flight soon

carry him out of the sparrow's danger, though the latter, at first, attempts a pursuit, which, however, she soon gives up.

"18*th*.—At 6.30 A.M. there is a pair of martins in each of the nests, and the sparrows do not seem to have prevailed. These two pairs of birds, then, must, I suppose, have entered one another's nests, and they appear to be on the friendliest terms, a friendly twitter from the one nest being, often, answered by a friendly twitter from the other. At least it sounds friendly, and there have been these double entries. During the time that the sparrow was besieging the martin's nest, she had all the appearance of real proprietorship. A true grievance, a just indignation, was in her every look and motion. She felt so, no doubt, and therein lies the irony of it. Nature is full of irony.

"22*nd*.—One or other of the two martins has, more than once, entered the nest usurped by the sparrows, so that I begin to doubt if the latter have really succeeded. As against this, however, I see both the sparrows, on the roof near, and the cock bird has twigs and grass in his bill. Yet, as long as I see them, they do not come to the nest. Nevertheless, another nest is now being begun, about a foot from the one they have invaded, and the birds building this, must, I feel sure, be the owners of the latter.

"23*rd*.—At 7 this morning the building of the new nest is going rapidly forward, but the hen sparrow, with a sinister look, sits near, in the gutter running round the roof. She has a little grass in her bill, and with this, after a while, she flies to the

abandoned nest. She clings outside it, for a little, then, all at once, instead of entering, attacks the two martins building their new one, flying at each, in turn, and pecking them venomously. The martins do not resist, and soon take to flight, but once again the sparrow attacks them, with the grass still in her bill, before entering the old nest with it, as finally she does. Undeterred by these two attacks, the martins continue to ply backwards and forwards, ever building their nest. The hen sparrow soon flies out of her ill-gotten one, and away, and, shortly afterwards, the cock comes and sits on the piping, with a small tuft of moss and grass in his bill. For a most inordinate time he sits there, with these materials, and then, time and time again, he flies into a neighbouring tree, and returns with them, going off, still holding them, at last, without once having been to the nest. Meanwhile the hen has returned with a much more considerable supply, which she takes into the nest, at once. Afterwards she comes with more, but again her anger is aroused by the sight of the two poor martins, always building, and she flies at them, laden as she is, just as before. They take flight, as usual, but soon return, and continue industriously to build. Both are now doing so in the prettiest manner, lying side by side, but turned in opposite directions, so that each works at a different part of the nest. Then one of them flies eight times (if not more) to the nest, and away again, with a large piece of black mud protruding, all the while, from his bill, which is forced considerably open by it. He seems, each time, unable to bring it out, but, on the ninth return, succeeds in

doing so—if, indeed, this is the explanation. When he flies in, this last time, it does not look such a bulk in the mouth as before. It may be—and this, perhaps, is more probable—that it had not before been sufficiently worked up with the salivary secretions, and that the bird was doing this, all the time, though making its little visits as a matter of custom. During the earlier ones he had the nest to himself, but, on the last, his partner was there, and he almost pushed her out of it, with a little haste-pleading twittering, seeming to say, 'Mine is the greater need.' Both the sparrows have been, several times, in and out of the old nest, during this, and sometimes sitting in it together. The hen is building in good, workmanlike fashion, whereas the cock contributes but little. The mud which these martins used to build with, was brought, by them, from a little puddle in the village street, till this became dry, after which I did not see where they went. I have seen quite a number of them, including some swallows, collecting it at a pond in a village near here. A very pretty sight it was, to see them all so busy, and doing something dirty so cleanly—for, after all, swallowing mud is dirty if looked at in a commonplace kind of way, though not at all so, really, if we consider the end to which it is done.

"30*th*.—Two more martlets are beginning a nest just above my bedroom window, and on the very mud-stains of their last one. Others seem choosing a site, for two pairs of them hang upon certain spots, twittering together, in a most talking manner, flying away, then, and returning to talk again, as if

they were—not house-, but foundation-hunting. I notice that these birds, when they fly from the proposed or contemplated site, will often, after making a circle round, wheel in to the nest nearest to it, and, poised in the air, beneath the portal, take, as it were, a little friendly peep in. Yet it is not all friendly, for I have just seen a bird struggling for entrance, and expelled by the proprietor of the nest—by the one proprietor, I think, but both were at home, and my impression is that if only one had been, the visitor might have been well received, as, indeed, I have seen and recorded. Now, too, I have seen a fight in the air between two martins, *à propos* of an intended entrance on the part of one of them. House-martins, therefore, fight amongst themselves—as do sand-martins, very violently—and this makes their apparent total inability to defend themselves against the attacks of sparrows, the more remarkable. No doubt the sparrow is a stronger bird, but the martins, with their superior powers of flight, might annoy it incessantly when in the vicinity of the nest, to the extent, perhaps, of driving it away. That they should all combine for this purpose is, perhaps, too much to expect, but when one sparrow, only, attacks a pair of them, one might think that both would retaliate. As we have seen, however, a pair of martins, when attacked in this way upon three occasions quite failed to do so. Probably the period of fighting and striving has long ago been passed through, and the sparrow, having come the victor out of it, is now recognised as an inevitability. It is better for any pair of house-martins—and consequently for the race—to give up and build

another nest, than to waste their time in efforts which, even if at last successful, would make them the parents of fewer offspring.

"*June 1st.*—The nest above my window has been built at a great rate, and is now almost finished. Compare this with the very slow building of some martins last year, and with Gilbert White's general statement. There is no finality in natural history, and any one observation may be contradicted by any other. This nest, the day before yesterday, was only just beginning, and now it is almost finished. A layer of half an inch a day, therefore, is quite inadequate to the result, and so the supposed reason for the slow rate of advance, when the nest is built slowly, falls to the ground.[1] Late in the year, the nests do, sometimes, drop—by which I have made acquaintance with the grown young, and the curious parasitic fly upon them—but this, I think, belongs to the chapter of accidents, and is not to be avoided by any art or foresight of the bird. Other nests have now been begun, and these, like all the rest, as far as I can be sure of it, are on the exact sites of so many old ones. What interests me, however, is that, on two of these sites, nests, for some reason, were not built last year, though they were the year before. Possibly they were begun there last year, but destroyed without my knowledge (women and gardeners would do away with birds, between them), in which case no further attempt was made to build there. But this I do not think was the case. The

[1] As, were it the true one, this nest should have done—but did not, as I remember. Instead, it stood firm through the time of sitting and rearing.

birds, therefore—supposing them to be the same ones—missed a year, and then built in the same place as two years ago. There were only the stains of the old structures left, but these were covered by the fresh mud, as a head is by a skull-cap. These martins, therefore, assuming them to have been the same, must either not have built, last year, or, having had to build somewhere else, they must yet have remembered their old place of the year before, and come back to it.

"*5th.*—This evening I watched my martins from the landing window, at only a few yards' distance. Two had made nests on a wall that stood, at an angle, just outside, and in either one or both of these nests, one of the two birds was usually sitting. Thus, either two or three more, as the case might be, were wanted to make up the two pairs that owned the two nests. But instead of two or three, often six or eight, at a time, would be fluttering under the nests, and a still greater number circled round about, from which these came, at intervals, to flutter there. That every one of these birds was interested, in some way and to some degree, in the two nests, was quite obvious. They seemed, often, on the point of clinging to one, with a view to entering it, and to be stopped, only, by the bird inside giving, each time, a funny little bubbling twitter, which seemed, by its effect, to mean, 'No, not you; you're not the right one.' But whenever a bird did enter one of the nests, he flew straight at it, and was in, in a moment, being received—if the other one was at home—with a shriller and louder note, something like a scream.

The harsher sound meant welcome, and the softer one, unwillingness.

"That there is some interest taken by the martins of a neighbourhood — or, at least, of any little colony—in the nests built by their fellows, seems clear, and I have recorded, both the friendly entries of one bird into two nests, each of which was occupied by another, and the struggles of two, to enter one, where, also, the partner bird, either of one or the other, was sitting. All these facts together seem best explained by supposing that the female house-martin is something of a light-o'-love, and that when she builds her nest, more than one male holds himself entitled to claim both it and her, as his own. If, for some reasons, we feel unable to adopt this view, we may fall back upon that of a social or communistic feeling, as yet imperfectly developed, and wavering, sometimes, between friendliness and hostility. Be it as it may, the facts which I have noted appear to me to be of interest. In regard to the last-mentioned one — the interest, namely, manifested by several birds, in nests not their own—White of Selborne says: 'The young of this species do not quit their abodes all together; but the more forward birds get abroad some days before the rest. These, approaching the eaves of buildings, and playing about before them, make people think that several old ones attend one nest.' How does this apply here? 'Nohow,' I reply (with Tweedledee), for no young birds could possibly have left the nests, at this date (June 5). I doubt, indeed, whether any eggs had been hatched. White, living in a southern county, says elsewhere (Letter

LV.): 'About the middle of May, if the weather be fine, the martin begins to think in earnest of providing a mansion for its family.' This is my experience too, and in East Anglia, at any rate, where May is generally like a bad March, and often colder, I am sure he never thinks about it sooner. Neither in Dorsetshire, too, when I was last there, did any martins begin building, in a village where they build all down the street, before about the middle of May, as White says, and when I inquired for them, a week or ten days sooner, the cottage people, who must know their habits in this respect, told me it was too early for them yet. Elsewhere, 'tis true, we read that the martin 'sets about building very soon after its return, which may be about the middle of April,' though I never remember them here before May. This is not my experience, nor was it White's, who says—and, I believe, with great correctness—'For some time after they appear, the *hirundines* in general pay no attention to the business of nidification, but play and sport about, either to recruit from the fatigue of their journey, or,' &c. &c. (Letter LV.) (the rest of the sentence is historically interesting). However, let some young martins, in some places, be as precocious as they like, this I know, that none were abroad in Icklingham, in the year 1901, upon the 5th of June. The several birds, therefore, that attended one nest in the way I have described, were old, and not young, birds, and I connect their conduct with those other cases I have mentioned, which point towards a socialistic tendency in this species.

"24*th*.—Watching from the landing window, this

morning, I saw a house-martin attacked by another one, whilst entering its nest with some feathers. I called to our Hannah to bring my son's fishing-rod, and never took my eyes off the nest, whilst she was coming with it. Meanwhile, one martin had come out, and, on my touching the nest with the rod, a second did, also. One of a pair, therefore, had, by making its nest, excited the anger of a third bird, and this I have seen more than once. Is the angry bird, in such cases, a mere stranger, or is it a rival, in some way? If the last—and the other seems unlikely—does one hen consort with two or more cocks, or *vice versâ?* I have noticed, however, with more than one kind of bird, that the hens seem jealous of each other collecting materials for the nest.[1]

"*August 3rd.*—It is customary for two of the young martins to sit with their heads looking out at the door of the nest—very pretty they look—and ever and anon one of the parent birds will fly in to them, as she circles round, and hanging there, just for a moment, there is a little twittering chorus—mostly I think from the chicks—and off she flies again. It is difficult to be quite sure whether, in these short flying visits, the chicks are really fed. Sometimes they are so short that this seems hardly possible. At others something does seem to pass, and the mouth of one of the chicks may be seen opened, just after the parent flies off. Yet it hardly seems like serious feeding. But at this very moment a bird has, thus, flown in to the young, and one of them, I am sure, was, this time,

[1] "Bird Watching," pp. 104, 105.

fed. This has happened again—and yet again—but now, this last time, the parent bird has entered the nest. The time before, whilst the one parent was hanging there, and, I think, giving the chick something, the other flew in to the wall, and clung there, about six inches off, seeming to watch the scene with pleased attention. Yet, though food does, as I now feel sure, sometimes pass in these visits, at others, as it seems to me, only remarks do. At this stage of the argument, one of the young birds projects its tail through the entrance-hole, and voids its excrement. Under this nest and another one, about two feet from it, there is a heap of excrement on the slanting roof of the greenhouse below; an interesting thing to see, and cleanly if rightly considered, yet unsightly I must confess—that part of it, alone, exists for the feminine eye. Out comes another tail, now, and the heap is increased. In this pretty way the nest is kept pure and wholesome.

"Now I have had a fine view of the feeding, having moved into a better position. The parent bird clung to the nest, and one of the chicks, thrusting out its head from the aperture, opened its mouth, so that it looked like a little round funnel. Into this the parent bird thrust not only her bill, but the upper part of her head as well, and the chick's mouth closing upon it, there instantly began, on the part of both, those motions which accompany the process of regurgitation, as it may be witnessed with pigeons, and as I have witnessed it with nightjars. These becoming more and more violent, the parent bird was, at last, drawn by the chick, who kept pulling

back upon her, into the nest—that, at least, was the appearance presented. For some moments only the posterior part of the dam's body could be seen projecting through the aperture, and this continued to work violently, in the manner indicated. Then she disappeared altogether. A few minutes afterwards, another and much more lengthy visit is paid, by one of the old birds, to the nest, but, this time, though a young one looks out with open mouth, no feeding takes place.

"I have now to record that a bird about to enter the next nest to this, from which another, whose snowy throat proclaims it to be full-grown, has just looked out, is attacked, as it clings to the mud, and driven off, by a third bird. In the course of some few minutes this occurs twice again, the attack, each time, being very fierce, and the struggle more prolonged. And now, but shortly afterwards, the same two birds (as I make no doubt) fly, together, on to the nest, and both enter it, shouldering and pushing one another. They are in it some time, during which I can make nothing out clearly. Then one emerges, and I can see that the other has hold of him with the beak, detaining him slightly, as he flies away. This other, in a moment, flies out too, and then the head of a third—the one, no doubt, that has been in the nest, all the time—appears at the entrance, as before. Now this nest, though so late in the season, has the appearance of being a new one. It even seems not yet entirely finished, though nearly so. Perhaps it has been repaired, but, in any case, there are no young birds in it, nor do I think the old ones are sitting again, yet—for probably

there have been earlier broods. If we assume this, and that two out of the three birds are the mated pair, then we must suppose either that, all the while, a rival male has continued to fight for the possession of the nest and the female, or that two females lay claim to the nest, and have, perhaps, helped to build it. If this latter be the case, we may, perhaps, see in it an extension of that spirit of jealousy or rivalry which I have often observed in female birds, whilst collecting materials for their respective nests. Is it possible that such feelings may have led to that habit which the females of some birds have (or are supposed to have) of laying their eggs in one common nest? But I do not suppose so. In this case, as before, it appears that one of the rival birds—male or female—is preferred by the bird in the nest, for this one, now, as the prevailing party flies in and clings on the parapet, breaks into a perfect jubilee of twitterings, and fuller, croodling notes, that may almost be called song—very pretty indeed, and extremely pleasing to hear. Evidently either two males have fought for access to a female—or two females to a male—in a nest which one, or both, or all three have helped to make; but the difficulty in distinguishing the sexes prevents one from saying which of these two it is. Meanwhile the parent bird has, for long, clung to the other nest, without feeding the young.

"*5th.*—A young martlet has just been fed, leaning its head far out of the nest. The process was quick, this time. Still, it must, I think, have been a regurgitatory one. Two chicks, looking out from their nest, have been, for some time, uttering

a little piping twitter. Suddenly, with a few louder, more excited tweets, they stretch out both their heads, and their two widely-opened mouths look like little perfectly round craters, as the dam flies up and pops her head—as it were—as far as it will go, right into one of them. Almost instantly she is away again. Still, from what I have seen before, and from never catching anything projecting from the parent's beak, I think the food must have been brought up from the crop, or at least from somewhere inside—for I am not writing as a physiologist. The first case which I have recorded should, I think, be conclusive, and it was very carefully observed. There have just been two visits in such quick succession that I think it must have been the two parents. No doubt they both feed the young, but it is not so easy to actually see that they do. One of them flies in again, now, plunging its bill instantly right into the centre of the open mouth of the chick. Withdrawing it, almost at once, nothing is seen in the chick's mouth, though it is evident it has swallowed something. In another visit, a few minutes afterwards, the finger-in-a-finger-stall appearance of the parent's and chick's bills, and the motions of the latter, as though sucking in something, are much more apparent.

"Whether the dam always, or only sometimes, disgorges food that it has swallowed, or partially swallowed, or, at least, that it has brought inside the mouth, I cannot be sure; but I believe that the insects on which the young are fed, are never just carried in the beak, in the way that a thrush,

robin, wagtail, &c., brings worms or flies to its young. When one thinks of the bird's building habits and its swollen throat, bulged out with mud—as I think it must be—one may surmise that it finds it equally natural to hold a mash of insects in this way. I believe that all the swallow tribe, as well as nightjars, engulf their food in the way that a whale does infusoria, instead of seizing it, first, with the bill—at least that this is their more habitual practice. Thus, I was watching some swallows, once, flying close over the ground, when a large white butterfly (the common cabbage one, I think) suddenly disappeared, entombed, as it were, in one of them. Now, had a sparrow seized the butterfly the effect would have been quite different, and so would the process have been. It *would* have seized it, in fact, but the swallow must have opened its gape, and, in spite of the size of the butterfly, it went down so quickly that, to the eye, it looked as if it had been at once enclosed. Possibly, on account of its size, it was, perforce, held just for a moment, till another gulp helped it down. But the process, as I say, was very different to the more usual one, and I doubt if an ordinary passerine bird could have swallowed a butterfly on the wing, at all. It is rare, I think, for anything so large as this to be hawked at by swallows or martins. Small insects are their habitual food, and of these the air is often full. That numbers should be swallowed down which are too small to hold in the bill, seems almost a necessity, and that the house-martin, in particular, does this, and brings them up again for the young, in the form of a mash or pulp, I think likely from what I have seen,

and, also, from the bird's habit of swallowing and disgorging mud. That they, also, sometimes bring in insects in the bill may very well be the case, but I have not yet seen them do so, and, especially, I have missed that little collected bundle which, from analogy, I should have expected to see. The most interesting point, to me, however, about the domestic life of these birds, is their social and sexual relations, which I think are deserving of a more serious investigation than is contained in the scanty record which I here offer."

Another entry, which I cannot now find, referred to the sudden late appearance of several sand-martins, who ought—had they read their authorities—to have known better. I cannot help thinking that Gilbert White has been treated very unfairly about that theory of his. If certain of the swallow tribe are sometimes seen, on sunny days, in winter, then that is an interesting circumstance, and one which has to be accounted for. White, in drawing attention to it, has done his duty as a field naturalist, and the explanation which he has offered is one which seems to meet the facts of the case. If a swallow is here at Christmas, it cannot be in Africa, and as it cannot feed here, and is not, as a rule, seen about, it becomes highly probable that it is hibernating. It is not the rule for swallows to do this—nor do I understand White to say that it is—but it is the exception, here, that should interest us, especially at this time of day, when we know that what is the exception, now, may become the rule later on. The whole interest, therefore, lies in the question whether swifts, swallows, martins, &c.,

ever do stay with us during the winter, instead of migrating, and, in regard to this, White offers some evidence. What he deserves except praise for so doing I cannot, for the life of me, see, but what he gets—from a good many quarters, at any rate —is a sort of dull, pompous, patronising taking to task—"*Good* boy, but mustn't do that."

MOORHEN AND NEST

CHAPTER XI

THE Lark, which is our river here, and more particularly the little stream that runs into it, are, like most rivers and streams in England, much haunted by moorhens and dabchicks, especially by the former, though in winter I have seen as many as eleven of the latter—the little dabchicks—swimming, dipping, and skimming over the water, together. There is a fascination in making oneself acquainted with the ways of these little birds. They are not so easy to watch, and yet they are not so very very difficult. They seem made for concealment and retirement, which makes it all the more piquant when they come, plainly, into view, and remain there, at but a few yards' distance, which, with patience, can be brought about. The whole thing lies in sitting still for an hour—or a few more hours—waiting for the

dabchick to come to you, for as to your trying to go to him, that is no good whatever—"that way madness lies." In watching birds, though it may not be quite true—certainly I have not found it so—that "all things come to him who knows how to wait," this at least may be said, that nothing, as a rule, comes to him who does not know how to—least of all a dabchick.

Long before one sees the little bird—long before one could see it were it right in front of one, if one comes at the proper time—one hears its curious little note—accompanied, often, with scufflings and other sounds that make one long to be there—amongst the reeds and rushes, in the darkness. This note—which, until one knows all about it, fills one with a strange curiosity—is a thin chirrupy chatter, high and reed-like, rapidly repeated, and with a weak vibration in it. It is like no other bird-cry that I am acquainted with, but it resembles, or suggests, two things—first, the neigh or hinny of a horse heard very faintly in the distance (for which I have often mistaken it), and, again, if a tittering young lady were to be changed, or modified, into a grasshopper, but beg, as a favour, to be allowed still to titter—*as* a grasshopper—this would be it. Sometimes, too, when it comes, low and faint, in the near distance, one might think the fairies were laughing. This is the commonest of the dabchick's notes, and though it has some other ones, they are uttered, for the most part, in combination with it, and, especially, lead up to, and usher it in, so that it becomes, through them, of more importance, as the *grande finale* of all, in which the bird rises to its

emotional apogee, and then stops, because anything would be tame after that. Thus, when a pair of dabchicks play about in each other's company—which they will do in December as well as in spring—their note, at first, may be a quiet "Chu, chu, chu," "Queek, queek, queek," or some other ineffective sound. Then, side by side, and with their heads close together, they burst suddenly forth with "Chēēlee, lēēlee, lēēlee, lēēlee, lēēlee, lēēlee"—one thought, and both of one mind—

"A timely utterance gives that thought relief."

It is as though they said, "Shall we? Well then—*Now* then"—and started. Who that sees a pair do this in the winter—in the very depth of it, only a few days before Christmas—can doubt that the birds are mated, and will be constant through life? They are like an old couple by the fireside, now. As the spring comes round their youth will be renewed, and the same duet will express the warmer emotions. Now it is the bird's contentment note. You know what it means, directly. It expresses satisfaction with what has been, already, accomplished, present complacency, and a robust determination to continue, for the future, to walk—or swim—in the combined path of duty and pleasure. What a pretty little scene it is!—and one may watch these little cool-dipping, reed-haunting things, so dapper and circumspect, as near as one's *vis-à-vis* in a quadrille—nearer even—and tear out the heart of their mystery, with not a dabchick the wiser. No doubt about what they say for the future, for when a most authoritative work says "the note is a 'whit, whit,'" and so passes on,

it is time to bestir oneself. "Whit!" No. I deny it. Even when it ends there, when there is nothing more than that in the bird's mind, it is not "whit," but "queek" that it says—"queek, queek, queek, queek," a quavering little note, with a sharp sound —the long ē—always. "Queek," then, "*pas 'whit,' Monsieur Fleurant. Whit! Ah, Monsieur Fleurant, c'est se moquer. Mettez, mettez 'queek,' s'il vous plaît.*" But what is this "queek"—though repeated more than twice—compared with such a jubilee as I have just described, and which the birds are constantly making? Express it syllabically as one may, it is something very uncommon and striking—a little thin burst of rejoicing—and it lasts for some time: not to be passed off as a mere desultory remark or so, therefore—call it what one will—which almost any bird might make.

Besides, it is not merely what a bird says, that one would like to know, but what it means, and how it says it. One would like a description, where there is anything to describe, and no one, I am sure, could see a pair of dabchicks put their heads together and break out like this, and then say, *tout court*—without comment, even, much less enthusiasm, as though it exhausted the matter—"the note is a whit, whit." No, no one could be so cold-blooded. Though an alphabet of letters may follow his name, the dabchick is a sealed book to any one who writes of it like that. So now, coming again to the meaning of this little duet, there can, as I say, be no doubt that it expresses contentment, but this contentment is not of a quiet kind. It is raised, for the moment, to a pitch of

exaltation that throws a sort of triumph into it. It is an access, an overflowing, of happiness, and the note of love, though, now, in winter, a little subdued, must be there too, for, as I say, these birds mate for life. So, at least, I feel sure, and so I believe it to be with most other birds. Permanent union, with recurrent incentive to unite, matrimony always and courtship every spring—as one aerates, at intervals, the water in an aquarium—that, I believe, is the way of it; a good way, too—the next best plan to changing the water is not to let it get stagnant.

Whenever I can catch at evidence in regard to the sexual relations of birds, it always seems to point in this direction. Take, for instance, that species to which I now devote the rest of this chapter, the moorhen, namely—*Gallinula chloropus*—for the dabchick has been an encroachment. A very small pond in my orchard of some three half-dead fruit-trees was tenanted by a single pair, who built their nest there yearly. Had it not been for a cat, whose influence and position in the family was fixed beyond my power of shaking, I should have made, one year, a very close study, indeed, of the domestic economy of these two birds; but this tiresome creature, either by the aid of a clump of rushes, amidst which it was situated, or by jumping out boldly from the bank, got at the nest, though it was at some distance, and upset the eggs into the water. As a consequence, the birds deserted both nest and pond, nor did the lost opportunity ever return. A few points of interest, however, I had been able to observe, before the cat intervened. The year before, I had noticed two slight nests in the pond, in neither of

which were any eggs laid, whilst the pond itself remained always, as far as I could see, in possession of this one pair of birds only. In the following spring I again noted two moorhens' nests, in approximately the same situations as before, and now I observed further. During the greater part of the day no moorhens were to be seen in the pond, but, as evening began to fall, first one and then another of these two birds would either steal silently into it, through a little channel communicating with the river, or else out of the clump of rushes where one of these nests had been built. The other one was amongst the half-submerged branches of a fallen tree, the trunk of which arched a corner of the pond. Over to here the birds would swim, and one of them, ascending and running along the tree-trunk, would enter the nest, and sit in it quietly, for a little while. Then it would creep, quietly, out of it, run down the trunk, again, into the water, and swim over to this same clump of rushes, from which, in some cases, it had come. Whether it then sat in the nest there, also, I cannot so positively affirm, but I have no doubt that it did, for I could see it, for some time, through the glasses, a perfectly still, dark object, somewhat raised above the surface of the water. Assuming it to have been sitting in this nest, then it had, certainly, just left the other one, and, moreover, there were the two nests, and only the one pair of birds. For, as I say, I never saw more than two moorhens, at a time, in this pond, which, being very small, was, probably, considered by these as their property. Intrusion on the part of any other bird would, no doubt, have been

resented, but I never saw or heard any brawling. The pretty scene of peaceful, calm, loving proprietorship, was not once disturbed

When the two birds were together, one swam, commonly, but just behind the other, and kept pressing against it in a series of little, soft impulses —a quietly amorous manner, much for edification to see. Each night, from a little before the darkness closed in, one of these moorhens—I believe always the same one—would climb out on a particular branch of the fallen tree, and standing there, just on the edge of the black water, bathe and preen itself till I could see it no longer. It never varied from just this one place on the branch, which, though a thin one, made there a sort of loop in the water, where it could stand, or sit, very comfortably. The other of the two had, no doubt, a tiring-place of its own—I judge so, at least, because it would, probably, have bathed and preened about the same time, but, if so, it did so somewhere where I could not see it. Moorhens have special bathing-places, to which one may see several come, one after the other. This is at various times of the day, but I have noticed, too, this special last bathe and preening, before retiring for the night; and here I do not remember seeing two birds resort to the same spot. There would seem, therefore, to be a general bathing-place for the daytime, and a private one for the evening.

Here, then, we have two nests built by one and the same pair of moorhens, both of which were sat in—whether as a matter of convenience, by both parties, or by the female, only, in order to lay, I

cannot be sure—some days before the eggs appeared. But, two days afterwards, I found two other nests, or nest-like structures, at different points of the same pond, and these, for the reasons before given, must most certainly have been made by the same pair of birds; for they were moorhens' nests, and to imagine that four pairs of moorhens had been building in so confined an area, without my ever having seen more than two birds together, within it, though watching morning and evening, and for hours at a time, is to *pensar en lo imposible*, as Don Quijote is fond of saying. On the next day, I found the first egg, in one of the two nests last noticed—not in either of those, therefore, that I had seen the bird sitting in. This was on the 5th of May, and in as many days six more were added, making seven, after which came the cat, and my record, which I had hoped would be a very close and full one, came to an end. During this time, however, I had remarked yet a fifth nest, built against the trunk of a young fir-tree, that had fallen into the same small clump of rushes where the one with the eggs, and another, were: and all these five had sprung up within the last few weeks, for they had certainly not been there before. The number of moorhens' nests along the little stream, here, had often struck me with surprise, though knowing it to be much haunted by these birds. After these observations, I paid more particular attention, and found, in one place, four nests so close together as to make it very unlikely they could have been the work of different birds; and, of these, all but one remained permanently empty. Moreover, the three others, though

obviously, as it seemed to me, the work of moorhens, had a very unfinished appearance compared to the one that fulfilled its legitimate purpose. Less material had been used—though they varied in regard to this—and they seemed to have been formed, to a more exclusive extent, by the bending over of the growing rushes. As I say, no eggs were ever laid in these three nests, but in one of them I once found the moorhen who had laid in the other, sitting with her brood of young chicks. I have little doubt but that she had made the four, and was accustomed thus to sit in all of them. Whether she had made the supernumerary ones with any definite object of the sort, it is more difficult to say. For myself, I doubt this; but, at any rate, the moorhen would seem to stand prominent amongst the birds which have this habit of over-building, as one may call it—a much larger body, I believe, than is generally supposed.

With the above habit, a much stranger one, which, from a single observation, I believe this species to have, is, perhaps, indirectly connected. Moorhens, as a rule, lay a good many eggs—from seven to eleven, if not, sometimes, more. I have, however, upon various occasions, found them sitting on a much smaller number—on four once, and once, even, upon only three—notwithstanding that these represented the first brood. The nest with only three eggs I had watched for some days before the hatching took place. It could hardly have been, therefore, that others had been hatched out before, and the chicks gone; nor had it ever occurred to me that the original number might have been artificially

diminished, by the birds themselves. One day, however, I happened to be watching a pair of moorhens, by a lake in a certain park, when I noticed one of them walking away from the nest—to which, though it appeared quite built, they had both been adding —with some large thing, of a rounded shape, in its bill. Before I had time to make out what this thing was, the bird, still carrying it, became hidden behind some foliage, and this happened again on a second occasion, much to my disappointment, since my curiosity was now aroused. Resolved not to miss another opportunity if I could help it, I kept the glasses turned upon this bird whenever it was visible, and very soon I saw it go again to the nest, and, standing just outside it, with its head craned over the rim, spear down suddenly into it, and then walk away, with an egg transfixed on its bill. The nest was on a mudbank in the midst of shallow water, through which the bird waded to the shore, and deposited the egg there, somewhere where I could not see it. Twice, now, at short intervals, the same bird returned to the nest, speared down with its bill, withdrew it with an egg spitted on its point, and walked away with it, as before. Instead of landing with it, however, it, each of these times, dropped it in the muddy water, and I saw as clearly through the glasses as if I had been there, that the egg, each time, sank. This shows that they were fresh, for one can test eggs in this manner. Had it been, not the whole egg, but only the greater part of its shell that the bird was carrying, this would have floated, a conspicuous object on the black, stagnant water. That it was the whole egg, and transfixed,

as I say, not carried, I am quite certain, for I caught, through the glasses, the full oval outline, and could see, where the beak pierced it, a thin, transparent streamer of the albumen depending from the hole, and being blown about by the wind. As birds remove the shells of their hatched eggs from the nest, I took particular pains not to be mistaken on this point, the result being absolute certainty as far as my own mind is concerned. The circumstances, however, were not such as to allow me to verify them by walking to the spot. Early on the following morning I returned to my post of observation, and now I at once saw, on using the glasses, the empty egg-shell, as it appeared to be, floating on the water just where I had seen it sink the day before. No doubt the yelk-sac had been pierced by the bill of the bird, so that the contents had gradually escaped, and the shell risen to the surface as a consequence. This moorhen, then, had destroyed, at the very least, as I now feel certain, five of its own eggs, for that, on the first two occasions, it had acted in the same way as on the last three, there can be no reasonable doubt, nor is it wonderful that I should not, then, have quite made out what it was doing, considering its quick disappearance and the hurried view of it that I got. Afterwards, I saw the whole thing from the beginning, and had a very good view throughout. At the nest, especially, the bird was both nearer to me, and stood in a good position for observation.

Here, then, we seem introduced to a new possibility in bird life—parental prudence, or something analogous to it, purposely limiting the number

of offspring to be reared. I can conceive, myself, how a habit of this sort might become developed in a bird, for the number of eggs that can be comfortably sat upon must depend upon the size of the nest; and this might tend to decrease, not at all on account of a bird's laziness, but owing to that very habit of building supernumerary nests, which appears to be so developed in the moorhen. That a second nest should, through eagerness, be begun before the first was finished, is what one might expect, and also that the nest, under these circumstances, would get gradually smaller—for what the bird was always doing would soon seem to it the right thing to do. As a matter of fact, the size of moorhens' nests does vary very greatly, some being thick, deep, and massive, with a large circumference, whilst others are a mere shallow shell that the bird, when sitting, almost covers. Such a one was that which I have mentioned, as containing only four eggs—for they quite filled the nest, so that it would not have been easy for the bird to have incubated a larger number. The one from which the five eggs were carried, was, however, quite a bulky one. But whatever the explanation may be, this particular moorhen that I saw certainly did destroy five of its own eggs, carrying them off, speared on its bill, in the way I have described. Either it was an individual eccentricity on the part of one bird, or others are accustomed to do the same, which last, I think, is quite possible, when we consider how rarely it is that birds are seen removing the shells of the hatched eggs from their nests, which, however, they always

do. Certain of the cow-birds of America have, it seems, the habit of pecking holes both in their own eggs and those of the bird in whose nest they are laid.[1] The cow-bird is a very prolific layer, and it is possible that we may see, in this proceeding, the survival of a means which it once employed to avoid the discomfort attendant on the rearing of too large a family, before it had hit upon a still better way out of the difficulty. The way in which the moorhen carried the eggs is interesting, since it is that employed by ravens in the Shetlands, when they rob the sea-fowl. It would seem, indeed, the only way in which a bird could carry an egg of any size, without crushing it up.

As bearing on the strongly developed nest-building instinct of the moorhen, leading it, sometimes, to make four or five when only one is required, it is interesting to find that, in some cases, the building is continued all the while the eggs are being hatched, or even whilst the young are sitting in the nest—in fact as long as the nest is in regular occupation. The one bird swims up with reeds or rushes in his bill—sometimes with a long flag that trails far behind him on the water—and these are received and put into position by the other, in the nest. Thus the shape of the nest may vary, something, from day to day, and from a point where, yesterday, the eggs, as one stood, were quite visible, to-day they will be completely hidden by a sconce, or parapet that has since been thrown up. It may be thought, from this, that the birds have some definite object in thus continuing their labours, but, for myself, I believe that it is merely in deference

[1] Hudson's "Argentine Ornithology," vol. i., pp. 72–79.

to a blind impulse, which is its own pleasure and reward. It is a pretty thing to see a pair of moorhens building. During the later stages they will run about, together, on the land, their necks stretched eagerly out, the whole body craned forward, searching, examining, sometimes both seizing on something at the same time—the one a twig, the other a brown leaf—and then running with them, cheek by jowl, to the nest, on which both climb, and place them, standing side by side. On their next going forth, they may start in different directions, or become separated, so that when one goes back to the nest he may find the other already upon it. It is interesting, then, to see him reach up, with whatever he has brought, and present it to his partner's bill, who takes it of him, and at once arranges it. The look, the general appearance of interest and tender solicitude, which the bird, particularly, that presents his offering, has, must be seen to be appreciated. Not that the other is deficient in this respect—a gracious, pleased acceptance, with an interest all as keen, speaks in each feather, too. The expression of a bird is given by its whole attitude—everything about it, from beak to toe and tail—and, by dint of this, it often appears to me to have as much as an intelligent human being has, by the play of feature; in which, of course, birds are deficient—at least to our eyes. Certain I am that no *dressed* human being could express more, in offering something to another, than a bird sometimes does; and if it be said that we cannot be sure of this, that it is mere inference based on analogy, it may be answered that, equally, we cannot be *sure*, in the other case—nor, indeed, in anything.

When the male and female moorhen stand, together, on the nest, it is impossible to distinguish one from the other. The legs, which in the male, alone, are gartered, are generally hidden, whilst the splendid scarlet cere—making a little conflagration amongst the rushes—and the coloration of the plumage, are alike in both—at least for field observation. In the early autumn, and onwards, one sees numbers of moorhens that have a green cere, instead of a red one, and the plumage of whose back and wings is of a very plain, sober brown, much lighter than we have known it hitherto. These are the young birds of the preceding spring and summer, and everything in regard to their different coloration would be simple enough, if it were not for a curious fact—or one which seems to me to be curious—viz. this, that the moorhen chicks have, when first hatched, and for some time afterwards, a red cere, as at maturity. It seems very strange that, being born with what is, probably, a sexual adornment, they should afterwards lose it, to reacquire it, again, later on. Darwin explains the difference between the young and the parent form, upon the principle that "at whatever period of life a peculiarity first appears, it tends to reappear in the offspring, at a corresponding age, though sometimes earlier." Thus, in the plumage of the young and female pheasant, or the young green woodpecker, we may suppose ourselves to see the ancestral unadorned states of these birds. But what should we think if the young male pheasant was, at first, as brilliant as the mature bird, then became plain, like the female, and afterwards reassumed its original

brilliancy, or if the woodpecker of either sex were first green, then brown, and then green again. If the young moorhen, having exchanged its scarlet cere for a much less showy one, kept this latter through life, we should, I suppose, assume that the first had been acquired long ago, and then lost for some reason, possibly because change of habits, or circumstances, had made it more of a disadvantage, by being conspicuous, than it had remained an advantage, by being attractive. Are we, now, to think that, having acquired, and then lost, the crimson, the bird has subsequently reacquired it? If so, what has been the reason for this? Were green ceres, for some time, preferred to scarlet ones? This hardly seems probable, since the green, in this instance, is pale and dull. However, birds are but birds, and even amongst ourselves anything may be fashionable, even downright ugliness, as is almost equally well seen in a milliner's shop or a picture gallery. As far as the mere loss of beauty is concerned, a parallel example is offered by the coot, which, in its young state, is all-glorious, about the head, with orange and purple, which changes, later, to a uniform, sooty black. But the coot stops there; it does not get back, later on, the colours it has lost.

Young moorhens are almost, if not quite, as precocious as chickens. Out of three that were in the egg, the day before, I found two, once, sitting in the nest, from which the shells had already been removed. The nest was on a snag in the midst of a small pond, or, rather, pool, so that I could not get to it; but, as I walked up to the water's edge, both the chicks evinced anxiety, though in varying

degrees. One kept where it was, at the bottom of the nest, the other crawled to the edge and lay with its head partly over it, as though ready to take the water, which, no doubt, both would have done, had I been able to come nearer. Yet, in all probability, as the pool lay in a deep hollow, seldom visited, I was the first human being they had either of them ever seen. The third egg was, as yet, unhatched; but coming, again, on the following day, the nest was entirely empty, and I now found pieces of the egg-shells, lying high and dry upon the bank of the pool, to which they had evidently been carried by the parent birds. In the same way, it will be remembered, the moorhen that destroyed its eggs, walked with them through the water, to the bank, on which it placed three out of the five—two at some distance away.

Though so precocious, yet the young moorhens are, for some time, fed by their dams. I have seen them run to them, with their wings up, over a raft of water-plants, and then crouch and lift their heads to one of their parents, from whom they received a modicum of weed. Or they will sit down beside their mother, and look up in her face in a pretty, beseeching way. When frightened or disturbed, they utter a little wheezy, querulous note, like "kew-ee, kew-ee," which has a wonderful volume of sound in it, for such little things. The mother soon appears, and gives a little purring croon, after which the cries cease; or she may answer them with a cry something like that of a partridge. She calls them to her with a clucking note, uttered two or three times together, and repeated at longer or

shorter intervals. When one sees this, one would never doubt but that here is the special call-note of the mother to the chicks. Nevertheless, I have heard her thus clucking, whilst sitting on a first brood of eggs, and this shows how careful one ought to be in attributing a special and definite significance to any cry uttered by an animal. Besides the one which I have mentioned, young moorhens make a little shrilly sound that has something, almost, of a cackle in it. There is also a little "chillip, chillip"; nor does this exhaust their repertory. In fact they have considerable variety of expression, even at this early age. They swim as "to the manner born," nid-nodding like their parents, but cannot progress against a stream that is at all swift. One paddling with all its might, neither advancing nor receding, and uttering, all the while, its little querulous cry, is a common sight. Up a steep bank they can climb with ease, and they have a manner of leaning forward, when running, to an extent which makes them seem always on the point of overbalancing, that is very funny to see. For some time, they are accustomed to return to the nest, after leaving it, and sit there with one of the parent birds. When surprised, under these circumstances, the mother (presumably), utters a short, sharp, shrilly note, which is instantly followed by another, equally short and much lower. As she utters them she retreats, and the chicks, with this warning, are left to themselves—to stay or to follow her, as best they can.

Having often disturbed birds under these or similar conditions, I can say confidently that the

moorhen employs no ruse, to divert attention from its young. The following circumstance, therefore, as bearing on my theory of the origin of such stratagems, especially interested me. In this case I came suddenly upon a point of the stream where the bank was precipitous, on which a moorhen flew out upon the water, with a loud clacking note, and then, after some very disturbed motions, swam to the opposite shore, giving constant, violent flirts of the tail, the white feathers of which were, each time, broadened out, as when two male birds fight, or threaten one another. In this state she went but slowly, though most birds in her position would have flown right off. On my coming closer to the edge of the bank, six or seven young chicks started out, all in different directions, as though from a central point where they had been sitting together on the water, as, no doubt, they had been, the mother with them, just as though upon the nest. No one could have thought that this moorhen had any idea of diverting attention from her young to herself. Sudden alarm, producing, at first, a nervous shock, and then distress and apprehension, seemed to me, clearly, the cause of her actions, which yet bore a rude resemblance to highly specialised ones, and had much the same effect. From such beginnings, in my opinion, and not from successive "small doses of reason," have the most elaborate "ruses" been evolved and perfected.

In one or two other instances—in a wood-pigeon, for example, and a pheasant—I have noticed the strange effect—amounting, for a few moments, to a sort of paralysis—which a very sudden surprise may

produce in a bird, even when its young do not come into question. Moorhens, too, are excitable, even as birds. Their nerves, I think, are highly strung. I have often noticed that the report of a gun in the distance—even in the far distance—will be followed by half-a-dozen clanging cries from as many birds—in fact, from as many as are about. Especially is the hen moorhen of a nervous and sensitive temperament, open to "thick-coming fancies," varying from minute to minute. How often have I watched her pacing, like a bride, on cold, winter mornings, along the banks of our little stream. Easy, elastic steps; head nodding and tail flirting in unison. She nestles, a moment, on the frosted grass, then rises and paces, as before, stops now, stands on one leg a little, puts the other down, again makes a step or two, then another pause, glances about, thinks she will preen herself, but does not, nestles once more, gives a glance over her shoulder, half spies a danger, rises and tip-toes out of sight. What a little bundle of caprices and apprehensions! But they all become her, "all her acts are queens." Some special savour lies in each motion, in each frequent flirt of the tail. Though this flirtation of the tail is very habitual with moorhens, though nine times out of ten, almost, when you see them either on land or water, they are flirting it, still they do not always do so. "*Nonnunquam dormitat bonus Homerus*"—"*Non semper tendit arcum Apollo.*" It *can* be quite still, that tail. I have seen it so—even twenty together, whose owners were reposefully browsing. But let there be *any* kind of emotion, almost, and heavens! how it flirts!

Moorhens are pugnacious birds, even in the winter. At any time, one amongst several browsing over the meadow-land, may make a sudden, bull-like rush—its head down and held straight out—at another, and this, often, from a considerable distance. The bird thus suddenly attacked generally takes flight, and afterwards, as a solace to its feelings, runs at some other one, and drives it about, in its turn. This second bird will do the same by a third, and thus, in wild nature, we have a curious reproduction—much to the credit of Sheridan—of that scene in "The Rivals" where Sir Anthony bullies his son, his son the servant, and the servant the page. "It is still the sport" in natural history, to see poor humanity aped. Such likenesses are humiliating but humorous, and, by making us less proud, may do good. But chases like this are not in the grand style. There is nothing stately about them, no "pride, pomp, and circumstance of glorious war"—little, perhaps, of its true spirit. As the spring comes on it is different. Then male birds that, at three yards apart, have been quietly feeding, walk, if they come a yard nearer, with wary, measured steps, in a crouched attitude, holding their heads low, and with their tails swelled out. On the water these mannerisms are still more marked, and then it is that the bird's true beauty—for beauty it is, and of no mean order—is displayed. Two will lie all along, facing each other, with the neck stretched out, and the head and bill, which are in one line with it, pointing straight forward, like the ram of a war-ship. Their tails, however, are turned straight

up, in bold contrast with all the rest of them, so that, with the white feathers which this part bears, and which are now finely displayed, they have a most striking and handsome appearance. There is a little bunch of these feathers—the under tail-coverts—on either side of the true tail, and each of these is frilled and expanded outwards, to the utmost possible extent, which gives it the shape and appearance of one half, or almost half, of a palm-leaf fan. The tail is the whole fan, so that, what with its size, and the graceful form that it has now assumed, and the pure white contrasting with the rich brown in the centre, it has become quite beautiful, more so, I think, than the fan of any fan-tail pigeon. Indeed the whole bird seems to be different, and looks more than twice as handsome as it does under ordinary circumstances. Its spirit, which is now exalted and warlike, "shines through" it, and, with its rich crimson bill, it glows and burns on the water, like Cleopatra's barge. A fierce and fiery little prow this bill makes, indeed, and there is the poop, too, for the elevated tail, with the part of the body adjoining, which has, also, a bold upward curve, has very much that appearance. Thus, in this most salient of attitudes, with tail erect, and with beak and throat laid, equally with the whole body, along the water, with proud and swelling port the birds make little impetuous rushes at one another, driving, each, their little ripple before them, from the vermilion prow-point. They circle one about another, approach and then glide away again, looking, for all the world, like two miniature war-ships of proud opposing nations: for

their pride seems more than belongs to individuals —it is like a national pride. Yet even so, and just as great deeds seem about to be achieved, the two may turn and swim off in a stately manner, their tails still fanned, their heads, now, proudly erect, each scorning, yet, also, respecting the other, each seeming to say, "Satan, I know thy strength, and thou know'st mine." Otherwise, however, as the upshot of all this warlike pomp, they close in fierce and doubtful conflict. This is extremely interesting to see. After lying, for some time, with the points of their beaks almost touching, both the birds make a spring, and, in a moment, are sitting upright in the water, on their tails, so to speak, and clawing forwards and downwards with their feet. The object of each bird seems to be to drag his adversary down in the water, so as to drown him, but what always happens is that the long claws interlock, and then, holding and pulling, both of them fall backwards from their previously upright position, and would be soon lying right on their backs, were it not that, to prevent this, they spread their wings on the water, so that they act as a prop and support, which, together with their hold on one another, prevents their sinking farther. Their heads are still directed as much as possible forward, and in this singular attitude they glare at each other, presenting an appearance which one would never have thought it possible they could do, from seeing them in their more usual, everyday life. They may sit thus, leaning backwards, as though in an arm-chair, and inactive from necessity, for a time which sometimes seems like several

minutes, but which is, more probably, several seconds. Then, at length, with violent strugglings, they get loose, and either instantly grapple again, or, as is more usual, float about with the same proud display as before, each seeming to breathe out menace for the future, with present indignation at what has just taken place.

Moorhens fight in just the same manner as coots, and seeing what a very curious and uncommon-looking manner this is, it might be thought that it was specially adapted to the aquatic habits of the two species. It is not. It is related to their terrestrial ancestry, and the terrestrial portion of their own lives. One has only to see them fighting on land to become, at once, aware that they are doing so in exactly the same way as they do in the water, and, also, that this way, on land, is by no means peculiar, but very much that in which cocks, pheasants, partridges, and, indeed, most birds, fight. For, jumping up against one another, moorhens, like these, strike down with the feet, but, having no spurs, use their long claws and toes in the way most natural to them. And this, no doubt, their fathers did before them, in deeper and deeper water, as from land-rails they passed into water-rails, until, at last, they were doing it when bottom was not to be touched, and they had only water to leap up from. Even the falling back with the claws interlocked has nothing specially aquatic in it. I have seen moorhens do so in the meadows, and they then spread out their wings, to support themselves on the ground, just as they do in the water. The continual leaping up from the water, as from the

ground, is extremely noticeable, especially in the coot, and, in fact, the strange appearance presented by the whole thing—its *bizarrerie*, which is very great—is entirely due to our seeing something which belongs, essentially, to the land, carried on in another element, for which it is not really fitted. How differently do the grebes fight—by diving, and using the beak under water! Yet they, like the coot, are only fin-footed, whilst the coot is almost as good a diver as themselves. No one, however, comparing the structure and general habits of the two families, can doubt that the one is much more distantly separated from its land ancestry than the other. In both the coot and the moorhen, indeed, we see an interesting example of the early stages of an evolution, but the coot has gone farther than the moorhen, for besides that it dives much better, and swims out farther from the shore, it bathes floating on the water, whilst the moorhen does so only where it is shallow enough to stand.

Readers of "The Naturalist in La Plata," may remember the account there given of the curious screaming-dances—social, not sexual—of the Ypecaha rails. "First one bird among the rushes emits a powerful cry, thrice repeated; and this is a note of invitation, quickly responded to by other birds from all sides, as they hurriedly repair to the usual place. . . . While screaming, the birds rush from side to side, as if possessed with madness, the wings spread and vibrating, the long beak wide open and raised vertically." Do moorhens do anything analogous to this, anything that might in time grow into it, or into something like it? In my opinion they do,

for I think that I have seen a hint of it, on a few occasions, and on one in particular, of which I made a note. Two birds, in this case, had been floating, for some time, quietly on the water, when one of them, suddenly, threw up its wings, waved them violently and excitedly, and scudded, thus, rather than flew, along the surface, into a reed-bed not far off. Before it had got there the other moorhen, first making a quick turn or two in the water, threw up its wings also, and scudded after its friend, in just the same way. Then came from the reeds, and was continued for a little time, that melancholy-sounding, wailing, clucking note that I have so often listened to, wondering what it might mean, and convinced that it meant something interesting. But if "the heart of man at a foot's distance is unknowable," as a Chinese proverb says—and doubtless rightly—that it is, so is the whole of a moorhen, when it has got as far as that, amongst reeds and rushes. Here, however—and I have seen something very similar, which began on the land—we have the sudden, contagious excitement, *à propos de rien* it would seem, the motion of the wings—not so very common with moorhens, under ordinary circumstances—and the darting to a certain spot, with the cries immediately proceeding from it: all which, together, bears a not inconsiderable resemblance to the more finished performance of the Ypecaha rail, a bird belonging to the same family as the moorhen.

It is a pity, I think, that our commoner birds, when related to foreign ones in which some strikingly peculiar habit has long been matter for

wonder, should not be more carefully and continuously observed, with a view to detecting something in their own daily routine, which might throw light on the origin of such eccentricities—something either just starting along, or already some way on the road to, the wonderful house at which their kinsfolk have arrived. Unfortunately, whilst the end arouses great interest, the beginnings, or, even, something more than the beginnings, either escape observation altogether, or are not observed properly. When a thing, by its saliency, has been forced upon our notice, it is comparatively easy to find out more about it; but when it is not known whether there is anything or not, but only that, if there is, it cannot be very remarkable, the initial incentive to investigation seems wanting. Yet the starting-place and the half-way house are as interesting as the final goal, and our efforts to find the former, in particular, ought to be unremitting. In a previous chapter, I have given my reasons for thinking that we might learn something in regard to the origin of the bower-building instinct—that crowning wonder, perhaps, of all that is wonderful in birds—by making a closer study of rooks. But for this proper observatories are needed, and whilst those who possess both the means of making these and the rookeries in which to make them, are not, as a rule, interested, those who are have too often neither the one nor the other—I, at least, stand in this predicament.

It may be thought that the above-described sudden excitement and activity on the part of these two moorhens was, more probably, of a nuptial character; but I do not myself think so, for the

nuptial antics—or, rather, the nuptial pose—of the bird, is of a quite different character, being slow and stiff, a sort of solemn formality. It belongs to the land and not the water, where, indeed, it could hardly be carried out. In making it, the two birds advance, for a little—one behind the other—with a certain something peculiar and highly strung in their gait and general appearance. Then the foremost one stops, and whilst a strange rigidity seems to possess every part of him, he slowly bends the head downwards, till the beak, almost touching the ground, points inwards towards himself. Meantime the other bird walks on, with an increasingly stilted, and, withal, stealthy-looking step, and when a little way in front of its companion, makes the same pose in even an exaggerated manner, curving the bill so much inwards, with the head held so low down, that it may even overbalance and have to make a quick step forward, or two, in order to recover itself. Here we have another example—and there are many—of a nuptial pose—between which and true sexual display it is hard, even if it be possible, to fix a line of demarcation—common to both the sexes; and, just as with the peewit, it is seen to the greatest advantage, not before, but immediately after, coition, in the act, or, rather, the two acts of which, the male and female play interchangeable parts. There is hermaphroditism, in fact, which must be real, emotionally, if not functionally—for what else is its *raison d'être?*

Surely facts such as these deserve more attention than they seem to have received. To me it appears that not only must they have a most important

bearing on the question of the nature and origin of sexual display, and whether there is or is not, amongst certain birds, an intersexual selection, but that some of those odd facts, such as dual or multiplex personality, which have been made too exclusively the subject of psychical research—or rather of psychical societies—may receive, through them, a truer explanation than that suggested by the hypothesis of the subliminal self, in that they may help us to see the true nature of that part of us to which this name has been applied. Surely if both the male and the female bird act, in an important office for the performance of which they are structurally distinct, as though they were one and the same, this proves that the nature of either sex, though, for the most part, it may lie latent in the opposite one, must yet reside equally in each. Here, then, we have a subliminal element, but as this can only have been passed on, through individuals in the bird's ancestral line, by the ordinary laws of inheritance, is it not likely that other characteristics which seldom, or perhaps never, emerge, have also been passed on, in the same way, thus making many subliminal *selves*, instead of one subliminal *self*, merely? Of what, indeed, is any self—is any personality—made up, but of those countless ones which have gone before it, in the direct line of its ancestry? What is any bird or beast but a blend between its parents, their parents, and the parents before those parents, going back to the beginnings of life? But that much—more, probably, than nineteen twentieths—of this complicated mosaic lies latent, is an admitted fact both in physiology and psychology,

to justify which assertion the very naming of the word "reversion" is sufficient. But if this be a true explanation for the animal, what excuse have we for disregarding it, and dragging in a transcendental element, in our own case? None whatever that I can see; but by excluding from their *purview*—to use their own favourite word—every species except the human one, the Psychical Society, in my opinion, are making a gigantic error, through which all their conclusions suffer more or less, so that the whole speculative structure, reared on too narrow a basis of fact and observation, will, one day, come tumbling to the ground.

Why should so much be postulated, on the strength of mysterious faculties existing in ourselves, when equally mysterious, though less abnormal ones, exist in various animals? Can we, for instance, say that the sense of direction (and this is common to savage man and animals)[1] is less extraordinary than what we call clairvoyance, or that the one is essentially different from the other? And what is more mysterious than this (which I have on good authority), that a certain spot should, year after year for some forty years, be chosen as a nesting-site by a pair of sparrow-hawks, although, during many of these years, not *one* only of the breeding birds, but *both of them*, have been shot by the game-keepers? What is it tells the new pair, next year, that, somewhere or other in the wide world, a certain spot is left vacant for them? Again, I have brought forward evidence to show that the

[1] The facts of migration should be studied in regard to this. See Professor Newton's "A Dictionary of Birds," pp. 562–570.

same thought or desire can communicate itself, instantaneously, to a number of birds, in a way difficult to account for, other than on the hypothesis of thought-transference, or, as I should prefer to call it, collective thinking. Who can imagine, however —or, rather, why should we imagine—that faculties which, though we may not be able to understand them, yet do exist in animals, have become developed in them by other than the ordinary earth-laws of heredity and natural selection? It is, indeed, easy to imagine that the power of conveying and receiving impressions, otherwise than through specialised sense-organs, may have been—and still be—of great advantage to creatures not possessing these; and how can such structures have come into being, except in relation to a certain generalised capacity which was there before them? Darwin, for instance, in speculating on the origin of the eye, has to presuppose a sensitiveness to light in the, as yet, eyeless organism. Again, it does not seem impossible that the hypnotic state—or something resembling it—may be the normal one in low forms of life, and this would make ordinary sleep, which occurs for the most part when the waking faculties are not needed, a return to that early semi-conscious condition out of which a waking consciousness has been evolved. Be this as it may, we ought surely to assume that any sense or capacity, however mysterious, with which animals are endowed, was acquired by them on the same principles that others which we better understand were; and, moreover, where all is mystery—for ultimately we can explain nothing—why should one thing in nature be deemed

more mysterious than another? It seems foolish to make a wonder out of our own ignorance; which, however, we are always doing. But, now, if such powers and faculties as we have been considering, transmitted, in a more or less latent condition, through millions of generations that no longer needed them, had come, at last, to man, they could, it seems probable, only manifest themselves in him, through and in connection with his own higher psychology; just, in fact, as sexual love does, for this, of course, is essentially the same in man and beast. Yet we have our novels and our plays. Thus, such endowments, answering no longer to the lowly needs which had brought them into being, would present, when wrought into the skein of our human mentality, a far higher and more exalted appearance, well calculated to put us in love with ourselves—never a very difficult business—to the tune of such lines as "We feel that we are greater than we know," "Out of the deep, my child, out of the deep," and many another *d'este jaez*, which, though they issue from the lips of great poets, may be born, none the less, of mere human pride and complacency. Yet, all the time, animal reversion, as opposed to godlike development, might be, as I believe it is, the *vera causa* of what seems so high and so holy.

Were the late Mr. Myers' conception of the subliminal self—a part of us belonging, as far as one can understand the idea, not to this earth but to a spiritual state of things beyond and without it, and bringing with it intuitive knowledge and enlarged powers, from this outer sea, these extra-territorial waters—were, I say, this conception a true one, it

is difficult to see why such knowledge and such powers should always have stood in an ordered relation to the various culture-states through which man—the terrestrial or supraliminal part of him, that is to say—has passed, and to his earthly advantages and means of acquiring knowledge. It is difficult to see why the subliminal part of such a gifted race as the Greeks, though proportionately high, yet knew, apparently, so much less than this same sleeping partner in the joint-firm, so to speak, of far less gifted, but later-living peoples: why genius, which is "a welling-up of the subliminal into the supraliminal region," should bear, always, the impress of its age, race, and country: why it is governed by the law of deviation from an average, as laid down by Galton: why it should so often be ignorant in matters which ought to be well known to the subliminal ego, as thus conceived of: why it asserts what is false as frequently as what is true, and with the same inspired eloquence:[1] why "the *dæmon* of Socrates" was either ignorant of its own nature, or else deceived Socrates, who of all men, surely, was fitted to know the truth: why Aristotle perceived less than Darwin: why Pythagoras grasped only imperfectly what Copernicus saw fully: why no other Greek astronomer had an inkling of the same truths: why Shakespeares and Newtons do not spring out of low savage tribes: why the negro

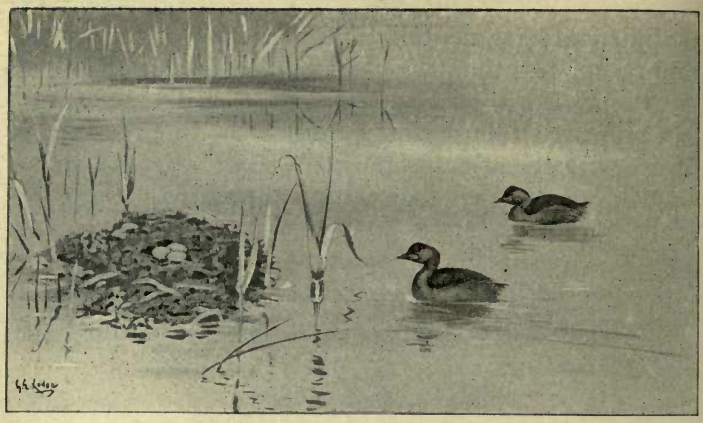
[1] Compare, for instance, with the "Out of the Deeps," &c., these lines of Catullus—

> "Soles occidere, et redire possunt,
> Nobis, cum semel occidit brevis lux
> Nox est perpetua una dormenda."

race has produced no man higher than Toussaint l'Ouverture, who to the giants of the Aryan stock is as Ben Nevis to Mount Everest: and so on, and so on—a multitude of difficulties, as it appears to me, which the theory has neither answered, nor, as far as I know, has yet been called upon to answer.

I really do wish that writers upon psychical subjects would sometimes make an allusion to the animal world—the very existence of which one might, almost, suppose they had forgotten. The perpetual ignoring of so vast a matter—as though one were to go about, affecting not to breathe—is not only irritating, but calculated to produce a bad impression. Surely the originator or maintainer of any view or doctrine of the nature and immortal destinies of man, ought to be delighted to enforce his arguments by showing that they are applicable, not to man only, but to millions of animals, to whom, as we all now very well know, he is more or less closely related. When, therefore, we constantly miss this most natural and necessary extension, it is difficult not to think that some flaw, some weak point in the hypothesis—and, if so, *what* a weak one!—is being carefully avoided. It is amusing to contrast the space which animals occupy in such a work as Darwin's "Descent of Man" with that allotted to them—to be counted not by pages, but lines—in those two huge volumes of the late Mr. Myers' "Human Personality and its Survival of Physical Death." Yet, as clearly as man's body, in the former work, is shown to have been evolved out of the bodies of animals, so clearly is his mind demonstrated to have come to him through their

minds. That, mentally and corporeally, we are no more nor less than the chief animal in this world, is now indeed, a proven and, scientifically speaking, an admitted thing; and I think it is time that those who, with scientific pretensions, seem yearning, more and more, to spell man with a capital M, should be called upon to state their views in regard to that mighty assemblage of beings, but for which he (or He) would never have appeared here at all, yet which, notwithstanding, they seem determined to ignore.



DABCHICKS AND NEST

CHAPTER XII

ONE evening in June 1901—the 6th, to be precise —I was walking near Tuddenham, where a big lane crosses a little stream by a rustic bridge, and stopped to lean against the palings on one side. Looking along the water, I saw, but hardly noticed, what looked like a snag or stump, round which some weeds and débris had accumulated. All at once, my eye caught something move on this, and, turning the glasses upon it, I at once saw that a dabchick was sitting on its nest. I watched it, for a little, and as it had built within full view of the roadside, so it was evident that it was not in the smallest degree alarmed by my presence, though, under other circumstances, it would certainly have stolen away before I was within the distance. This was about 7.15, and at 7.30 I saw another dabchick

—the male, as I will assume, and which, I think, is probable—swimming up to the nest. It brought some weeds in its bill, which it gave to the sitting bird, who took and laid them on the nest; and now the male commenced diving, in a quick, active, brisk little way, each time, upon coming up, bringing a little more weed to the nest, which he sometimes placed himself, sometimes gave to the female. Several times he passed right under the nest, from side to side. I now made a slight détour, and creeping up behind a hedge, found, when I raised my head, that both the birds had disappeared. Yet I was only a few paces nearer than the roadway, which shows how much habit had to do with making the birds feel secure. Walking, now, along the bank of the stream, I examined the nest more closely. It was built, I found, on the but just emerging end of a water-logged branch, the butt of which rested on the bottom. No eggs were visible, but I could see, very well, where they had been most efficiently covered over, according to the bird's usual, but by no means invariable, habit. Upon my going back to the roadway, and standing where I had been before, one of the birds almost immediately reappeared, and swimming boldly up to the nest, leapt on to it as does the great crested grebe, but in a less lithe, and more dumpy manner. Then, still standing, it removed, with its bill, the weeds lately placed there, putting a bit here and a bit there, with a quick side-to-side motion of the head, and then sank down amongst them, evidently on the eggs. I left at 8.15. There had been no change on the nest, but I may have missed this, by

alarming the birds, nor can I be quite sure whether it was the same bird that went back to it. The nest of these dabchicks seemed to me to be a larger structure, in proportion to their size, than those of the crested grebes which I had watched last year. It rose, I thought, higher above the water, and was less flat, having more a gourd or cocoa-nut shape. Towards the summit it narrowed, so that the bird sat upon a round, blunt pinnacle.

At 7 next morning I found the bird—that is to say, one of them—still upon the nest, and, shortly afterwards, a boy drove some cows along a broad margin of meadow, skirting the stream opposite to where it was, so that he passed a good deal nearer to it than I had crept up yesterday. It, however, did not move, and was quite unnoticed by the boy. Afterwards, I walked along the same margin, myself, and sat down upon a willow stump, in full view of the bird, in hopes to see it cover its eggs, should it grow nervous and leave them. For a few minutes, it sat still on the nest, and then, all at once, jumped up and took the water, without arranging the weeds at all, leaving the eggs, therefore, uncovered. Instantly on entering the water, it dived, and I saw nothing more of it whilst I remained seated on the stump. But as soon as I went back to my place—almost the moment I was there—up it came quite close to the nest, dived again, emerged on the other side, and then, swimming back to it, jumped on, and reseated itself, without first removing any weeds—thus confirming my previous observation. Shortly afterwards the partner bird appeared, dipping up, suddenly, not very far from the nest, and, for some

little time, he dived and brought weeds to it, as he did the other night. Then the female—who had, probably, sat all night, and would not have left till now, had I not disturbed her—came off, diving as she entered the water, and disappearing from that moment. The male, who was not far from the nest, swam to it, and took her place, where I left him, shortly afterwards, at 8.35. The eggs had been left uncovered by the female when she went, this last time, and this seems natural, as she, no doubt, knew the male had come to relieve her.

Next morning I approached the stream from the Herringswell direction, and crept up behind the bushes, on the bank, without having once—so it seemed to me—been in view of the bird, which I had no doubt would be in its accustomed place. However, as soon as, peeping through, I could see the nest, I saw that it was empty. On going to the gate and waiting for some ten minutes, the bird appeared as before, and, jumping up, commenced rapidly to remove the weeds from the eggs, standing up like a penguin, and with the same hurried, excited little manner that I had noticed on the first occasion of its doing so. Not only had it seen me, therefore, or become aware of my presence, but it had had time to cover its eggs, and this very efficiently, to judge by the amount of weed it threw aside. After this I was nearly a week away, and, on visiting the nest again, nothing fresh happened, except that the two birds made, in the water, that little rejoicing together which I have described in the last chapter. The same note is uttered, therefore, and the same little scene enacted between

them, summer and winter, and in whatever occupation they are engaged. Both on this and another occasion, the sitting bird, when I walked down the bank, went off the nest without covering the eggs, the first time letting me get quite near, before going, and, the next, taking alarm whilst I was still at some distance. It seems odd that it did not, in either instance, conceal the eggs and steal off without waiting. To suppose that it thought itself observed, and that, therefore, concealment was of no use, would be to credit it with greater powers of reflection than I feel inclined to do. I rather look upon the habit as a fluctuating and unintelligent one, and in the continuation of the building and arranging of the nest, after incubation has begun, we probably see its origin. As bearing upon this view, it is, I think, worth recording that upon this last occasion of their change on the nest, the bird that relieved its partner—the male, as I fancy—pulled about and arranged the weeds, after jumping up, though the eggs had been left uncovered, the female, as usual, going off suddenly, without the smallest halt or pause. Once let the birds become accustomed to pull about the weeds of the nest, before leaving and settling down upon the eggs, and natural selection would do the rest. The eggs which were most often covered would have the best chance of being hatched, and the uncovering them would be a matter of necessity. Here, again, I can see no room for those little steps or pinches of intelligence, on which instincts, according to the prevailing view, are supposed to have been built up. The prevalence and strength of mere meaningless

habits amongst animals, as well as amongst ourselves, seems to me to have been too much overlooked. That the additions made by the dabchick —as well as the crested grebe—to the nest, during incubation, and the frequent pulling of it about, answer no real purpose, and might well be dispensed with, I have, myself, no doubt.

On the last of these two visits, the male bird jumped once upon the nest, whilst the female was still sitting, and took his place as she went off. Next day, I noticed something quite small move upon the nest, against, and partly under, the sitting bird. With the glasses I at once made this out to be a chick, which was sitting beneath the rump and between the wing-tips of the dam, with its head looking the contrary way to hers. As the male, now, swam up, the chick leaned forward and stretched out its neck, whilst he, doing the same upwards over the nest's rim, the tips of their two bills just touched, or seemed to me to do so. The old bird had just been dipping for weeds, and may have had a little in his bill, but I could not, actually, see that any feeding took place. Possibly that was not the idea. The male then swam out, and continued, for some time, to dip about for weed, and to place it on the nest. Then, again, he stretched his neck up—inquiringly, as it were—towards the little chick, who leaned out and down to him, as before—but, this time, the bills did not touch. This was on the 18th. On the 15th the eggs were still unhatched, as I had seen all four of them lying quite exposed in the nest; but some may have been hatched on the 17th, when the male, for the first

time that I had seen, jumped up on the nest whilst the female was still there. On the 20th, coming again at 8 in the evening, I find the bird on the nest, but on going and sitting down on the willow-stump I have mentioned, it takes the water and dives. I see no young ones on the water, and, on going to the nest, find it empty, with the exception of one uncovered egg. The shells of the others lie at the bottom of the stream. Going to the gate, again, the bird soon returns, dives, puts some weed on the nest, then swims away, and, as a joyous little hinny arises, I see the other swimming up, and it is, instantly, apparent that the chicks are on this one's back, for it shows unnaturally big, and high above the water. She comes to the nest, and, in leaping on to it, shakes them off—three, as I think—into the water, from which, after having paddled about, a little, they climb up and join her. In a few minutes, the partner bird swims up again, and stretching up its neck, in the gentle little way that it has before done, I feel sure that the chicks are being fed, though I cannot actually see that they are, owing to their being on the wrong side of their dam.

Next day I come at 4 in the morning, and it is as though there had been no interval between this and my last entry, for the one bird still sits on the nest with the chicks, whilst the other goes to and fro from it, feeding them. This time I see it do so, once, quite clearly. A little morsel of weed is presented on the tip of the bill, which the chick receives and eats, but just after this it goes off, with the others, on the back of the mother. The latter does not go far, but soon stops, and remains quite

still on the weeds and water, as though upon the nest—a thing which I have seen before. In about a quarter of an hour, the other bird emerges from some rushes, and then, the two swimming to meet each other, there is a most joyous and long-lasting little hinny between them—as pretty a little scene of rejoicing as ever one saw. It is a family scene, for the chicks are still on the back of the mother, which they have not once left. Having fully expressed themselves, the two parents separate, and the mother, swimming, still with her burden, to the nest, springs up on it, and, in her usual quick and active manner, goes through the weed-removing process, during the whole of which the chicks still cling to her, for they have not been flung off in her violent ascent. There are two of them—perhaps three—but of this I cannot be sure. The fourth egg, at any rate, must be still unhatched, for from what else can the weeds have just been removed?

At 5.20 the bird goes off, and, for a moment, the two chicks are swimming by her. One of them goes out to a tiny distance, but returns immediately, as though drawn in by a string—quite a curious appearance. They then press to, and crawl upon the mother, in an almost parasitical way, and, when on, I cannot distinguish them from her, though there is an unusual bigness and fluffiness at the extremity of her back, where they both cling, one at each side, projecting, I think, a little beyond her body. Now, too, I fancy I can detect a third, higher up towards her neck. The nest has been left uncovered, and at 6, no bird having come to it again, I go to look at it, and find, as

before, one brown egg lying in the cup, and perfectly exposed. All three chicks, therefore, must have been on the back of the mother, who, it is clear now, does not invariably cover the eggs, when leaving them, even though she is quite at her ease, and does not mean to return for some time. This can have nothing to do with three out of the four eggs having been hatched, for, as we have just seen, the one egg was covered by the bird when she left the nest the time before. I have settled it, I think, now, by my observations, that, neither with the great crested grebe nor the dabchick, is the covering of the eggs, on leaving the nest, invariable. In walking up the stream, after this, I got a glimpse of both the dabchicks, before they dived, one after the other. If the chicks were still upon the back of one—as I make no doubt they were—they must have been taken down with it. Next day I watched the family during the greater part of the morning, and was fortunate in seeing one of the chicks fed from the water, whilst sitting in the nest, on the back of its other parent. This was a delightfully distinct view. There was a small piece of light green weed at the tip of the parent's bill, and this the chick first tasted, as it were, and then swallowed. There were several changes on the nest, and the birds, between them, left it five times, but only covered the egg twice. However, on two of the occasions when it was left bare, the other bird quickly appeared and mounted the nest, whilst, on the third, the bird leaving remained close to it, till she went on again. Always, or almost always, the chicks were on the back of one or other of the birds, mostly that of one,

which I took to be the female. When she jumped up, they had to do the best they could, and once, whilst the one was flung off, the other kept its place like a good rider leaping a horse, and did so all the while the weeds were being cleared away, in spite of the mother's upright attitude—for, between each jerk from side to side, she stood as straight as a little penguin. I was unable to make out more than two chicks. Though, mostly, on the parental back, they sometimes swam for a little, and, once, I saw the black little leg of one of them come out of the water, and waggle in the air, in the way in which the adult crested grebe is so fond of doing. When the mother sat quite motionless in the water, with her head thrown back, and her chicks upon her, she looked exactly as when sitting on the nest, so that one might have thought she was, and that it was slightly submerged. The male, on these occasions, would sometimes pay her a visit, and the chicks, getting down, would swim up to him, and then would come the little thin, pan-piping, joyous duet between their two dams—a pretty, peaceful scene this, whilst statesmen (save the mark!) are making wars and devastating countries.

"Clanging fights and flaming towns, and sinking ships and praying hands."

How much good might be done in the world, could such people, all at once, when about to be mischievous, be turned into dabchicks![1] Soon after this the birds got away from the nest, leaving the one egg in it unhatched, and my observations came, in consequence, to an end. The one egg,

[1] "Translated," like Bottom—but more radically.

doubtless, was addled, and as I never could clearly make out more than two chicks together, I suppose this must have been the case with another of them, too. If so, however, it seems strange that this one should have disappeared, whilst the birds continued, for some time, to sit on the other.

On the 18th of the following August I found another nest, in which was one chick, together with three eggs still unhatched. It lay but just off the bank, and cover was afforded by some spreading willow-bushes. It was only by standing amidst these, however, that I could just see the nest, beyond a thin fringe of reeds, which guarded it. This was not very comfortable, so as the willows were too thin and flexible to climb, and my house was not very far off, I walked back, and came, again, after dark, with a pair of Hatherley steps, which I set up amongst the willows, where it remained for the next three weeks, and made a capital tower of observation, from which I could look right down into the nest, at only a few yards distance. At these very close quarters, and never once suspected, I was witness, day by day, of such little scenes as I have described, so that if I had been one of the birds themselves, I could hardly have gained a more intimate knowledge of them, as far as seeing was concerned. My near horizon was, indeed, limited almost to the nest itself, but by mounting the steps higher, or by standing on them, I could get a very good view, both up and down the stream, and was yet so well concealed that once a flock of doves flew into the bushes, just about me, and remained there quite unsuspicious. These steps, indeed,

placed overnight, make a capital observatory, for, as they stand upright, they do not need to be leant against anything, and their thin, open wood-work is indistinguishable amidst any growth that attains their own height. They are, moreover, comfortable either to sit or stand on.

Returning to the dabchicks, two out of the three remaining eggs were hatched out in as many days, but the last one, as in the case of the first nest I had watched, remained as it was for several days longer, nor can I, from my notes, make out whether it was finally hatched, or not.[1] However, as I say that I feel sure it was, it must, I suppose, have disappeared from the nest, but I never saw more than three chicks together, either with one or both of the old birds. Later on, the parents became more separated, and I then never saw more than two chicks with either, which makes me think that, at this stage, they divide the care of the young between them. They had then, for some time, ceased to resort to the nest, but as long as they continued to do so, they shared their responsibilities in another way, for whilst one of them, which I took to be the female, generally sat in the nest with the chicks upon her back, the other—the male—used to come to it and feed them. This he did more assiduously than any bird that I have ever seen discharge the office, for between 6 and 7, one evening, he had fed them forty times. After that I ceased to count, but he continued his ministrations in the same eager manner, for another three-quarters of an hour. To get the weed, he generally dived, and, on

[1] But see pp. 319, 320.

approaching the nest, with it, would make a little "peep, peeping" note, on which two or three little red bills would be thrust out from under the mother's wings, followed by their respective heads and bodies, as all, or some, of them came scrambling down. The instant the weed had been given them, they all scrambled up again, to disappear entirely under the little tent of the wings. As this took place, on an average, every minute and a half, and often much more quickly, the animation and charm of the scene may be imagined. The male showed the greatest eagerness in performing this prime duty, and if ever he was unable, as sometimes happened, to reach any of the chicks over the rounded bastion of the nest, he would get quite excited, and make little darts up at it, stretching to the utmost, and uttering his little "peep, peep." If this proved unsuccessful, he would go anxiously round to another side of the nest, and feed them from there. At other times the chicks were fed in the water, on which the weed was sometimes dropped for them, the parent having first helped to soften it—as it seemed to me—by biting it about in the end of his bill. Sometimes, too, the weed was laid on the edge of the nest, but, as a rule, the chick received it from the tip of the parent's beak. As I say, I never saw more than the three chicks, and if the fourth was hatched, the birds must have left the nest immediately afterwards, as is, I believe, their custom. Of the three, two would generally sit together, under the one wing of the mother, the third being under the other, from which one may be sure that she carries all four of them, two

under each. It struck me, several times, that there was a sort of natural cavity, or hollow, in the old bird's back, under each wing, with a corresponding arch in the wing itself, making, as it were, a little tent or domed chamber, for the chicks to sit in. Of this, however, I cannot be quite sure, but it is such a confirmed habit of the chicks to sit on the mother's back, beneath her wings, that there would be nothing, I think, very surprising in it. Never, one may almost say—but, at any rate, "hardly ever"—do the chicks sit beside the mother, in the nest in which they were born (the limitation, as it will be seen later on, is a necessary one). It is as proper to them to sit on the mother as it is to her to sit on the nest.

When off duty—that is to say, when not feeding the chicks—the male would sometimes make pretty lengthy excursions up the stream, as would the mother, too, when not sitting—up stream, I say, because they never seemed to go far down it. More often, however, he would stay about, in the neighbourhood of the nest, and then the sitting bird would sometimes call him up to it, by uttering a very soft and low note. He would then appear, stealing amongst the reeds with a look of gentle inquiry, and, on gaining the nest, both birds together would make a curious little soft clucking, or rather chucking, noise, expressive of love and content. "Dearest chuck!" they always seemed to me to say, and whether they did or not, that, I am sure, is what they meant. Coming, every day, to my little watch-tower, and sitting there, sometimes, for hours together, I thought, at the end of a week, that I had seen everything in connection with these

birds' care of their young, but there was one matter which I had yet to learn. I had, indeed, already had a hint of it, with the last pair of birds, besides that it seemed to me, on general principles, to be likely, but the optical proof had been wanting. One day, however, whilst walking quietly up the stream, I met one of my pair of dabchicks—the mother, as I think—swimming down it. She saw me at the same time as I did her, and swam to shelter, but she was not much alarmed, and bending amongst the reeds till my face was only on a level with their tops, I waited to see her again. Soon she appeared, coming softly towards me, but seeming to scrutinise the bank sharply, and, all at once, spying me, down she went, with extraordinary force and velocity, so that a little shower of spray—and, indeed, more than spray—was flung quite high into the air. I had not seen a sign of the chicks, and it seemed hardly possible that they could be on her back, all the time—but we shall see. Coming up, after her dive, turned round the other way, she swam steadily up the stream, and I soon lost her, round a bend of it. In order to see her again, and as a means of allaying her fears, I now climbed into a willow-tree, and from here I saw her, resting, in a pretty little pool of the stream. For ten minutes or more, now, with the glasses full upon her, I could see no sign of a chick, except, perhaps, that the wings were a trifle raised—but nothing appeared underneath them. All at once, however, I caught something; there was a motion, a struggling, and then a little red bill and round black head appeared, thrust out between the two wings, in the dip of the

neck. Then a second head showed itself, and, at last, with a peep here, and a scramble there, I made out all three. I am not quite sure of this, however, when the partner bird—the male, as I think him—swims into the pool, and instantly, as he appears, a chick tumbles down the mother, and comes swimming towards him. It is fed on the water, and, directly, afterwards the old bird dives several times in succession, at the end of which he has a piece of weed in his bill, which he reaches to the chick. The chick is thus fed several times, and then climbs on to his father's back, who, almost before he is under the wing, dives with him. On coming up, again, he rises a little in the water, and shakes himself violently, but the chick is not thrown off—he sits tight all the time. A second chick now swims up from the mother, and is fed in just the same way. Then, as the male dives again, the first chick becomes detached, and the two are on the water together. Both are soon fed, the male diving for them as he did before, and, whilst this is going on, I see the third chick, looking out between the wings of its mother. All three, then, have been on her back, and there, without the smallest doubt, they were, when she dived down in that tremendously sudden manner. It is a pity I had not seen them get up, first, as in the case of the male, and, also, that I lost sight of the female for a few moments, but it is quite improbable that the chicks should have been waiting, somewhere, for the mother, and taken their seats during the one little break in the continuity of my observations. At this early age the chicks are hardly ever to be seen without

one of the parents, even in the nest—I doubt, indeed, if I have ever seen them there alone.

The dabchick, therefore, is in the habit, not only of swimming with all its family on its back, and quite invisible, but of diving with them thus, too, and so accustomed are the chicks to be carried, or to sit, in this way, that during the early days of their life they may almost be said to lead a parasitical existence. Though they mount upon either parent, yet it has seemed to me that they prefer one to the other, and I think it more likely, on the whole, that the one who sits habitually with them, thus perched, in the nest, is the mother rather than the father, though, if so, it is the latter who does most of the feeding. It has appeared to me, too, though it may be mere fancy, that the chicks not only prefer the mother's back, but that they find more difficulty in getting upon the male's. Thus, upon the last occasion mentioned, when two out of the three left the mother, to go to the father, the first one to get up on him only succeeded in doing so after a great deal of exertion, whilst the last was struggling for such a very long time that I began to think he never would succeed, and when, at last, he did, he lay, for a little, in full view, as though exhausted. It is natural, of course, that the chicks should leave either parent, to be fed by the other, but I remember, once, when they happened to be sitting on the male's back, in the nest—which was unusual—at one soft sound from the mother, they all flung themselves off it, into the nest, and scrambled up with equal haste on to hers, as soon as she had taken her place there, which she did directly. Possibly they

thought they would be fed, and were hungry, but they did not seem disappointed, though they were not, nor had I ever seen so much enthusiasm shown before. However, as I say, this may be mere fancy, but whether they prefer it or not, they certainly do seem to sit much more on one parent, than on the other. It would be difficult to imagine a more comfortable seat than the back of either must be. It is like a large, flat powder-puff—but a frightened powder-puff, with its fluff standing all on end—whilst right upon it, though, of course, far back, a tiny little brush of a tail stands bolt upright. The wings, as a rule, cover most of this, and it is under their awning that the chicks, mostly, live. The chicks are pretty little things. At first they look black all over, but, on closer inspection, they are seen to be striped longitudinally, like little tigers—black and a soft, greyish yellow or buff—the beak being a mahogany red. The young of the great crested grebe are striped like this, also. Probably it is a family pattern, and represents the ancestral coloration, like the tartan of a Highlander, which, however, lasts through life—or used to.

On the 13th of August, after having watched them from the 8th, I made a discovery in regard to this pair of dabchicks, and thus, through them, the species, similar to that I had made with the moorhens, in my pond—similar, but not, I think, quite the same—and when I say a discovery, I mean, of course, that it was one for myself, which is, indeed, all I care about. I had got to my watch-tower before it was light, and could not, for some time, make out the nest. At length, when I could see

it, I saw the one white egg lying in it, which showed me that the bird was not there. Shortly afterwards, I heard both of them near the nest, and thought they would soon appear. As they did not, however, but seemed to keep in a spot which, though only a few paces off, was yet invisible from where I sat, I came down and climbed a willow-tree, commanding a view of it. I then saw the female (as I think) floating, or, rather, sitting, on the water, and, after a while, the male came up, and one of the chicks, going to him from off her back, was fed in the usual way. The female then—owing, perhaps, to the noise which I could not help making, for I was most uncomfortably situated, and the willow, though thin, was full of dead branches which kept snapping—swam up the stream. The male, however, remains, and, all at once, greatly to my surprise and interest, jumps up upon what I now see to be another nest, or nest-like structure, though I have not noticed it there before. Hardly is he on, when he jumps off again, and this he does two or three times more, at short intervals, in a restless, nervous sort of way. Having jumped down for the last time, he swims a little out, and appears, to my alarmed imagination, to keep glancing up into the tree, where I now, however, though it is very difficult to do so, keep perfectly still. At length, losing his suspicions, he floats again on the water, whilst the chick swims out from him, and then climbs again on his back. Then comes an interchange of ideas, or, at any rate, feelings, between him and his mate. He gives a little "chook-a-chook-a-chook-a," and this

is answered, from the neighbourhood of the nest, by a similar note. Pleased, he rejoins, is again responded to, the "chook-a-chook-a" becomes quicker, higher, shriller, and, all at once, both birds —each at its separate place—break into that little glad duet which I have mentioned so often, but cannot help mentioning here again. Then, swimming once more to the pseudo-nest, the male again jumps up on to, or, rather, into it, and remains sitting there, for some little time. The little chick has swum beside him to it, and now makes strenuous efforts to climb up after his dam, but he does not quite succeed, though I think, in time, he would have done, had not the latter come off, when he, at once, follows him. The chicks, however, had never had any difficulty in getting on to the real nest.

The discomfort of my position approaching, now, to the dignity of torture, I was obliged to get out of it, and, in doing so, made so much noise that the bird swam off, up the stream. Upon this I came down and examined the new nest, which was close to the bank. It was quite different to the other, being six or eight inches high, round the edge, with a deep depression in the centre, and seemed made, altogether, of the flags amongst which it was situated, some of the growing ones being bent inwards, so as to enter into its construction. But this is a moorhen's nest and not a dabchick's, which latter is formed of dank and rotten weeds, fished up by the birds from the bottom of the water. It is made flatter, moreover, and does not rise so high above the surface of the stream, though in both

these points there is, no doubt, considerable variation. Here, then, was something new in the domestic life of the dabchick. For two days after this I was too busy elsewhere to come to the stream, but on the morning of the third I got there about 6.30, and climbed into the same tree as before. I did not see either of the dabchicks, but heard them dipping about, some way lower down the stream, as I had before, when they did not come to the nest. I therefore came down and climbed another tree, and, as soon as I had done so, I saw a little beyond me—about as far from the first pseudo-nest as the latter was from the nest itself—two other structures, a few feet from each other, both of which had more or less the look of a moorhen's nest. In one of these sat, with an air of absolute proprietorship, a dabchick with one chick, and here they remained till the partner bird swam up, a little while afterwards, when they came off, and there was the usual pretty scene. The chick had been sitting, not, as it appeared to me, in the basket or depression of the nest, but only just beyond the edge of it, as though—and this I had noticed on the former occasion—it had struggled up as high as it could, and there remained.

From now till about a quarter to 9, when they all went off, and I came down, both the old birds frequently ascended and sat in this nest, whilst one or other of the chicks—for there were now two, if not three—tried to do so too, but never succeeded in getting quite over the edge of it, though struggling to accomplish this feat. The old birds, too, had necessarily to make a much

more vigorous and higher jump than they were accustomed to take when getting into their real nest. All this seemed to point to its being a moorhen's and not a dabchick's nest, and when I came down and looked at it more closely—it being only a few feet from the bank—that is what it seemed to be. The other nest near it seemed, still more obviously, a moorhen's, but this only because it was newly made, and had not yet been pressed down. In both, the growing flags had been turned down, to aid in the construction. Now, both these nests were near to the one which I had been watching, and one of them was not more than a few paces off. If we say a dozen—and I do not think it could have been more—then the three lay along a length of twenty-four paces of the stream, nor was there anything in the configuration of the latter, to cut off the owners of the one from those of the others. It seems, indeed, quite impossible that in this tiny little stream, which I was constantly scanning, up and down, I should never have seen more than one pair of dabchicks, at the same time, had three, or even two, pairs of them built within so limited an area. There was, indeed, one other pair—and, I think, from having watched the place through the winter, only one—in this lower part of the stream, but in another reach of it, some little way off, where they had a nest of their own. In this nest I had seen one of them sitting with its chick, which was about half-grown, and therefore more than twice the size of the largest of my own birds' brood. I can, therefore, have no doubt that the birds I saw in these two later-used extra nests,

were the same that I had watched hatching out their eggs in the original one, nor did I ever see them on the latter, after they had once left it for the others.

It seems, then, either that the dabchick must make, besides the true nest in which the eggs are laid, one or more other ones of a different type, and which are put to a different use; or else, that it habitually uses those of the moorhen, for this purpose—to sit in, namely, after leaving its own—thus taking advantage of the latter bird's habit of building several nests. I believe, myself, that the two extra nests, in which I saw my dabchicks, were moorhen's nests, for not only did they look like them, but once, when their usurpers were away, I saw two large moorhen chicks climb, first into one, and then the other; and, on another occasion, they were driven away from both of them by the mother dabchick, who pursued them in fierce little rushes through the water, with her family on her back. Some may think that I have taken a long time to make out a simple matter. What more natural than that a mass of reeds and rushes—which is all a moorhen's nest is—should sometimes serve as a resting-place for other reed-haunting birds? But there is a difference between something casual and something habitual, and everything I saw in the case of these two dabchicks suggested a regular practice. Parasitism in one species of bird, in regard to the nest of another, though not extending to the loss of the building or incubatory instinct, is almost as interesting as if it did, for we see in it a possible stage in a process by which this might be reached.

Why should the dabchick, after the hatching of its eggs, leave its own nest, in which it has hitherto sat, and sit in those of another bird? I examined the nest thus deserted, and found it to be sinking down in the water, which was still more the case with some other and older ones. This, I believe, is the answer to the above question. The bird's own nest is no longer quite comfortable, and others are to hand which are more so. Having stayed, therefore, as long as its incubatory instinct prompts it to, it resorts to these, and being no longer tied to one, uses several. But a habit at one time of the year, might be extended to another time, and if certain dabchicks were to take to sitting in the nests of moorhens, before they had made their own, some of these birds, whose nest-building instinct was weaker than in most, or who, finding themselves in a nest, imagined that they had made it themselves—which, I think, is possible—might conceivably lay their eggs there. It would then, in my opinion, be more likely that the usurping bird should remain, and hatch out, possibly, with its own, some one or more eggs of the bird it had dispossessed, than that the contrary process should come about.[1] However, the first business of a field naturalist ("and such a one do I profess myself") is to make out what does occur, and this I have tried to do.

I think it curious that neither of the two pairs of birds that I watched, hatched out, apparently, more than three of their eggs. The first pair certainly did not, and I saw the fourth egg in the nest of the second, after the birds had left it for another one,

[1] See *ante*, pp. 131, 132.

though my notes do not make it clear if it continued to lie there or not. I think it did not, but, at any rate, I never could make out more than three chicks together, with either one or both of the birds. It struck me that, after the family had left the nest, there was a tendency for the parents to divide, one taking two chicks, and the other the remaining one, since they could not take them two and two. It interested me, therefore, to come, now and again, on one of another pair of dabchicks, sitting in the nest—or *a* nest—with one half-grown chick only. Whenever I saw them, this dabchick and one chick were always by themselves. The question arises whether it is usual for only three out of the dabchick's four eggs to be hatched out. But whether this is possible, or why, if it is, it should be so, I do not know.

INDEX

INDEX

ANIMALS, mysterious faculties possessed by, 290, 291
Animal world, the, its existence ignored by writers on psychical subjects, 294
Antics, possible origin of some kinds of, 184, 185, 191–193
Artists, leave the fenlands alone, 3
Australian parrakeet (*Melopsittacus undulatus*), roosting habits of, 5, 6
Australian swan, nest-building actions of the, 174

BIRDS, roosting habits of, 5, 6
Song of, at dawn, 74, 75
Chases *à trois* of, 109, 110
Nuptial rite performed habitually on nest by some, 181
Some peculiarities in the fighting of, 185
Mixture of pugnacity and timidity in, 191
Their delight in nest-building, 199, 200; false ideas on this subject, 199, 200
Parental love in; from what period does it date? 208, 209
Parental affection and instinct of incubation; are they distinct? 208
Birds (*continued*)—
Performance of parental duties by male; in what originating? 208–211
Male feeding female, remarks on, 210, 211
Nebbing or billing, origin of habit in, 211–213
More interesting questions in regard to, avoided by ornithologists, 210
Kiss in proper sense of the word, 211–213
Collect insects, &c., to feed young, 216
Sexual relations of, 234–236
Permanent unions of, 265
Power of expression in, 274
Cries of, definite significance falsely attributed to, 278
Maternal ruses practised by, 279; suggested origin of these, 181, 279, 280
Our commoner ones related to foreign species with interesting habits should be more closely observed, 286, 287
"Bird Watching," referred to, 127, 128, 158, 175, 181, 253
Blackbirds, roosting note of, 4, 5
Variety of notes of, 4, 5
Alarm-note, so-called, of, 5

Blackbirds (*continued*)—
Strange actions of, in construction of nest, 173, 174
Hen alone observed to build by author, 206; cock seen to, also, by Mr. Dewar, 206; transition process probable; but which way? 206, 207
Cock does not incubate, 207
But helps feed the young, 208
Blue-Tit, movements of, compared with those of long-tailed tit, 17
Note of, 18
Steals materials from blackbird's nest, to build with, 205
Bower, the, may have grown out of the nest, 70; or out of the cleared space where some birds meet to court, &c., 70
Bower-Birds, possible origin of bowers, &c., of, 64–70

CAT, effects of a, on author's observations, 265, 268
Chaffinch, hen demolishes the nest of golden-crested wren, 205
Hen alone observed to make nest, 205
Nest-building actions of hen, 205, 206
Cheerful constitution, a, a good thing but not a good argument, 231
Children, death of, in quantity not affecting, 153
Cinnabar moth caterpillar, pupating habits of, 15
Ignored by fowls, 15
May offer example of warning coloration, 15
Coal-Tit, feeds on spruce-buds, 16; and on larch-buds, 16
Coal-Tit (*continued*)—
Note of, 16
Motions of, 16
Extracts seeds from fir-cones, 18, 19
Possible origin of name, 19, 20
Nesting habits of, 194–197
Flies directly into nest, 195, 196
Composition of nest of, 197
Size of nest of, 197
Commensalism, possible origin of, 120, 121
Coot, change of coloration in the, 276
Has become more aquatic than moorhen, 285
Dives better than moorhen, 285
Bathes floating on water, 285
Cow-birds, their habit of destroying their own, and foster-parents', eggs, 273
Cuckoo, comes late in April, 92
Playground of, 93, 94, 97, 98
Nuptial and social sportings of, 93–95
Various notes of, 95, 96
Does the male only say "cuckoo"? 96, 102, 103; difficulty of making sure of this, 102, 103; some evidence on the subject, 104, 105
Tune of, changed before June, 96; the old rhyme about, not trustworthy, 96
Manner of feeding of, 98, 99
Becoming nocturnal, 99, 100
Persecuted by small birds, 100, 101
Possible relations to, of small birds, 100, 101
Not confounded by small birds with hawk, 101, 102

DABCHICKS, haunt the river Lark, 261
Eleven together seen on Lark in winter, 261
Fascination in becoming acquainted with, 261
Curious note of, 262–264; and what it suggests, 262; is not "whit" but "queek," 263, 264
Grande Finale of, 262, 263
Matrimonial duet of, 263, 299, 300, 303, 305, 314, 315; and what it expresses, 263–265; is performed summer and winter, 299, 300
Mate for life, 263, 265
Observations on a pair of, at Tuddenham, 296–306
Domestic habits of, 296–320
Additions to nest by, after apparent completion and during incubation, 297–299, 301
Such additions seem unnecessary, 301
Leap on to nest of, 297, 302
Removal of weed from eggs by, 297, 299, 303
Nest of, described, 298
Close sitting of, on occasions, 298
Eggs sometimes left uncovered by, 298, 299, 300, 303, 304
Change on the nest of the, 299, 301, 304
Difficulty in eluding observation of, 299
Habit of covering eggs of, seems fluctuating and unintelligent, 300; probable origin of the habit, 300
Chicks fed by parents with weed, 301, 302, 304, 307, 308, 311
Dabchicks (*continued*)—
Chicks ride on parent's back, 302, 303, 304
Jump up on to nest, with young on back, 302, 303, 305
Sit still in water as though on nest, 303, 305
Family scenes, 303, 305, 311
Three chicks on parent's back, 304
One egg out of the four laid by, left unhatched, 305, 306, 307, 319, 320
Pair of, observed from pair of Hatherley steps, 306
Chicks divided between parents after leaving nest for good, 307, 320
Subdivision of parental labour in, 307
Assiduous feeding of chicks by male, 307
"Peep, peep" of, whilst feeding young, 308
Chicks sit under parent's wing, on back, 308, 309, 313
Natural hollow on back of, for chicks to sit in, 308, 309
Chicks rarely sit in true nest with parent except on back, 309
"Dearest chuck," note of, 309
Invisibility of chicks on parent's back, 310
Parent dives with three chicks on back, 310–312
Chicks prefer mother's back, 312, 313; and mount male's with more difficulty, 312
Back of, as seat for young, 313
Chicks striped like tigers, 313

Dabchicks (*continued*)—
Discovery made in regard to, 313
"Chook-a, chook-a," note of, 314
Moorhen's nest used by, to sit in with chicks, 314–318; probable origin of this habit, 319
Darwin, views of, as to origin of music, 10, 11; ignored by the late Mr. F. W. H. Myers, 10
Attributes colours of tiger, leopard, jaguar, &c., to sexual selection, 44, 45
"*Laudetur et alget*," 45

FENLANDS, charm of the, 3
Fieldfare, scolding of, 4
Firs, planted near Icklingham fifty years ago, 4
Frank Buckland, his brown paper parcel, 85
His half-part edition of White's "Selborne," 85

GILBERT WHITE on House-Martins, 243, 249, 251, 252; unfair treatment of, 259, 260
Great Crested Grebe, consummates nuptial rite on the nest, 68
Great Tit, movements of, compared to those of long-tailed tit, 17
Green Woodpecker, nest of, often seized by the starling, 129; is not much the worse for this, 130, 131; possible result of such deprivation, 131, 132
Feeds on ants, 31
Ants, how procured by, 219, 230
Young of, fed by regurgitation, 31, 217, 218
Green Woodpecker (*contd.*)—
Does not bring insects in beak to young, 216, 217
Almost wholly an ant eater, 218–221
Contents of excrements of, 220, 221
Almost as salient an instance of changed habits as Darwin's La Plata woodpecker, 220
Ant diet of, related to regurgitation of food in feeding young, 221
Must mate for life, 221
Conjugal habits in winter, 221, 222
Tail not required as support, 222
A fighter, though the contrary has been stated, 223
Spring tide activities of, account of, 224–238
Hostile demonstrations of, 225
Its method of fighting, 226–230, 233, 237
Fighting actions of, have become stereotyped, 227–230
Sexual relations of, 233, 234, 236, 237
Divergence of habits of, from those of the family, 236, 237
Ant-eating habits of, 236, 237
How does it roost? 237

HATHERLEY steps make good observatory for watching birds, 306, 307
Heart of man, Chinese proverb in regard to, 286
Hedge-Sparrow, steals building material from blackbird's nest, 205

Heron, cries, &c., uttered by, 72, 73, 75, 76, 77, 79
Nuptial flight of, 73, 80, 81
Uncouth appearance of, 73, 74, 81, 82
Ordinary flight of, 74
Domestic habits of, 72–80
Change on the nest, the, 75–78
Sits firm in a hurricane, 78, 79
A close sitter, 79
Watchfulness of, 79, 80
Descent of pair on to nest, 80
Can rise with single flap, 82
Eats frogs, moles, mice, shrews, &c., 82, 83
Its manner of catching and eating fish, 83, 84, 119
Delicacy of beak, 84
Beak of, compared with human hand, 84
Serratures in beak, 84
Serrated claw of, how used, 84–86
Management of large eel by, 85, 86
Supposed filament of, 86
Stalks his prey, 87
Settling on nest, 87, 88
Sometimes overbalances in catching fish, &c., 83
Heronry, a, near Icklingham, 72
The awakening of the, 72, 73
Historians, their song to an old tune, 231
Hooded-Crow, common in West Suffolk during winter, 51
Called "carrion crow" by the people, 51
Feeding habits of, 51, 52, 55
Haunt open warren lands, 51
Mingle with rooks, 52, 58
Disagreements of, with rooks, 52–54
Fighting methods of, 54
Hooded-Crow (*continued*)—
Rules of precedence of, when feeding in company, 53
Gregarious instincts of, compared with those of rooks, 54, 55
May sometimes roost with rooks, 55
Eats thistle roots, 56
Mysterious relations of, with rooks, 58–60
One seen flying with peewits, 127
House-Martin, domestic habits of, 239–259
Nest building of, 240–243, 246–248
Musical meetings of, 242–244, 253, 256
Gilbert White's reference to slow rate of building of, 243, 249; his explanation of this not the true one, 243, 249
Possible intercommunal marriages of, 244, 245
Sexual relations of, 244, 245, 252, 253, 255, 256, 259
Oppressed by sparrows, 243–246, 248
Quick building of nest of, 245, 249
Social and communistic relations of, 248, 250, 251, 252, 259
Fighting of, 248
Apparent inability to resist sparrows, 248
Suggested explanation of this, 248, 249
Builds nest on site of old one, 249; curious fact in relation to this, 249, 250
Young, feeding of, 253–257
Young, fed by regurgitation, 254–258
Insects, how caught by, 258;

House-Martin (*continued*)—
and how brought to young, 257–259

ICKLINGHAM, where situated, 1, 3
The country about, 1, 2, 4
Some seven miles from the fenlands, 56
Incubation, is instinct of, differentiated from parental love? 208
Instinct, may sometimes have grown out of mere mechanical movements, 179–180, 184, 185, 300, 301; evidence in regard to this, 180, 181
Resulting from lapsed intelligence, 185
"Intimations of immortality," supposed, 10

JACKDAWS, seem conscious of their superiority when with rooks, 54
Decorate their nests, 68
Jaguar, theory of protective colouring in regard to, questioned, 43, 44

KESTREL flying with peewits, 127
Kissing, origin of, in man probably utilitarian, 211–213
In relation to birds, 211–213

LANDSEER, false criticism of, 88, 89
Masterpiece of, removed from the National Gallery, 89
Larks, various ways of mounting and descending of, 107, 108
Individual variety in flight of, 108
Winter ways of, 108, 109
Larks (*continued*)—
Piping note in winter of, 109
Song in February of, 109
Chases *à trois* of, 109
Change locality according to season, 110
Leopard, theory of protective colouring in regard to, questioned, 43, 44
Lesser Spotted Woodpecker brings collection of insects in beak to feed young, 216
Lion, theory of protective colouring in regard to, questioned, 43
Long-tailed Tit, roosting habits of, 6
Movements of, 16–18; compared with those of blue tit, 17, 18
Aerial forced march of, 17
Note of, 18
Nest-building habits of, 198–204
Origin of dome of nest of, 199; and of entrance to, 200, 201, 203
Uniform way of entering and leaving nest of, 200
Contortionist powers of, 202, 204
Approaches and leaves nest by one set path, 202, 203
The "sweep" up to nest of, 203

MAN, the chief animal in this world only, 295
Maternal affection, beauty of, 214
All hail to, 216
Mellersh, Mr., letter of, to *Standard* about starlings referred to, 160
Migration, facts of, marginal reference to, 290

Missel-Thrush, harsh strident note of, 4
Puts a peewit to flight, 123
Skirmishes of, with stone-curlews, 123, 124
Retreats with honour, 124
Moorhen, haunts the river Lark, 261
Pair of, built yearly in author's pond, 265
Supernumerary nests made by, 265–269
Sits in two or more nests, 266–269
Bathing habits of, 267
Special bathing-places of, public and private, 267
Pronounced habit of over-building of, 269
Destruction of its own eggs by, 269–273; possible explanation of this habit, 272, 273; may be compared with that of the cow-birds of America, 273
Continued building of nest by, during incubation and rearing of young, 273
Due, probably, to a blind impulse, 273, 274
Legs of, gartered in male alone, 275
Triple successive coloration of the cere in, 275
Difficulty of explaining this, 275, 276
Precocity of young, 276, 277
Fear of man in the newly-hatched chick, 277
Carries shell of hatched egg to shore, 277
Young, fed by dams, 277
Young, notes of, 277, 278
Maternal cries of, 277, 278
Clucking note of, to call young, 277, 278; and for other uses, 278
Moorhen (*continued*)—
Variety of expression in cries of young, 278
Young, sit in nest with one parent, 278
No maternal ruse employed by, 181, 278, 279; material for the evolution of one possibly observed, 279
Nerves of, highly strung, 280
Effect of report of gun on, 280
Motions, actions, &c., of, 280
A bundle of caprices, 280
Habit of flirting tail of, 280
Pugnacity of, 281
Scene in "The Rivals" acted by, 281
Warlike display of, 281–283
Method of fighting of, 283–285; is essentially unaquatic, 284, 285
Pugnacity of, even in winter, 281
Bathes only in shallow water, 285
Analogy between some actions of, and more developed ones of Ypecaha rail, 285, 286
Nuptial antic or pose of, 287, 288
Emotional hermaphroditism of, 288
Interchangeable performance of nuptial rite in sexes of, 288; bearing of this on questions of nature and origin of sexual display, and of inter-sexual selection, 288, 289; as, also, on the subliminal self theory, 289
Myers, the late Mr. F. W. H., has ignored Darwin's views as to origin of musical faculty in man, 10

NATURAL history, no finality in, 249
Nature, sometimes looks unnatural, 88
Two voices of, 110
Full of irony, 245
Nest, false, of peewit, the, 166–168; is the real nest, 168
Of birds, suggested origin of the, 168–180
May have been originally a *thalamum* more especially, 181, 182
Was once put to two uses habitually, 181, 182; as it still is in some instances, 182
Nest-building instinct, suggested origin of, in birds, 168–184
Nightingale, hen alone seen to build, 206
Nightjar, common about Icklingham, 21
Sits on extreme tip-top of spruce or larch, 21
Its habit of clapping its wings, 21–23; sometimes a great many times consecutively, 22, 23
"Quaw-ee," note of, 21
Beauty of flight and aerial mastery of, 22
A new sensation obtained by seeing it, 22
Domestic habits of, 23–37
Change on the nest of, 24
Churring note uttered by both sexes, 25
Expressive power of the churr, 26
Incubation shared by male and female, 23, 24, 26
Sexes hard to distinguish, 26
Male less skilful in incubation than female, 26
Nightjar (*continued*)—
Hen, the more assiduous sitter, 26
Interesting scene observed, 26–29
Method of moving eggs adopted by, 27
Mahomet and the mountain, 28
Both parents feed chicks, 29
Low querulous note of, whilst in unharassed circumstances, 29
Chicks fed by regurgitation, 29–32, 34
Probable mode of catching insects of, 30–33
Kind of insects, &c., mostly eaten by, 31–33
An aerial whale, 33, 258
Difference in size between the two chicks of, 35
Early quiescence and later activity of chicks, 35, 36
Nesting site gradually deserted, 35
Chicks called up by parents, 35, 36
Maternal ruse practised by, 36
Anxiety of parents in regard to chicks, 36, 37
Chicks walk or run easily, 37; as do also the grown birds, 37
Nuptial rite may be performed on the ground, 37
Variety of notes of, 37–39; no special limited meaning assignable to these, 37–39
Resemblance of, to piece of fir-bark, 40, 41; possible meaning of such resemblance, 41, 42
Generally protective colouring in relation to incubative, &c., habits of, 42, 43

Nightjar (*continued*)—
Returns, each year, to same locality, 50
Has favourite trees and branches, 50
Does not always nest in same spot, 50
Nuptial antics, suggested origin of, 180, 181

Optimists, as reasoners, 231
Ostrich, nesting habits of, as described by Mr. Cronwright Schreiner, 176–178; suggestions as to the meaning and origin of these, 177–179
Rolling of, in courtship, 178
Two kinds of, 178
Ornithologists, works of seem written to assist bird-nesters, 210

Parasitic instinct, in birds, possible origin of, 132
Parental ruses, suggested origin of, 180, 181
Partridges, curious chasings of one another of, 188–191; nature and suggested explanation of, 189–192
Peewits, repair to fens towards end of October for the winter, 3, 116
Return in February, 116
Appearance, &c., of, 117
Their way of bathing, 117, 118; and of feeding, 119
Chased by missel-thrush, 124
Rolling and other strange sexual antics of, 163–166, 174, 175; nature of such movements, 167, 168, 171–173; theory founded upon them as to origin of nest-building amongst birds, 166–184
Peewits (*continued*)—
"False nests" of, 166–168; not essentially differing from the real nest, 168
"*Pesses*," formerly used in Icklingham church, 56
Pheasant, at roosting time, 5
Roosting habits of, 6
Trumpety note of, 7
Soft note of, at roosting, 7
Partial paralysis produced in, by sudden fright, 279, 280
A cock, put to flight by stone-curlew, 123
Philistines, the, bloodthirsty shouts of, 156
False plea of the, 156, 157
Having no appreciation of anything, can destroy everything with impunity, 156, 157
Hypocritical pretence of, to an æsthetic motive, 157
Poet, the, not a teacher, 11
His aptitude to feel and express, 12
Protective coloration theory, unsatisfactory in regard to tiger, leopard, jaguar, &c., 43–49
Inapplicable to animals that hunt at night by scent, 47
Versus sexual selection, 43–50
Psychical Research Society, great mistake made by, 143–145
Its man-worshipping attitude, 143–145
Its neglect of the comparative method, 143–145
Indifferent to field natural history, 145
Should let the dogs into church, 145
Conclusions of, reared on too narrow a basis of fact and observation, 290

RABBITS, the stamping of, with hind legs may have various meanings, 38
Theory in regard to white tail of, unsubstantiated, 46, 47
Browse lichen, 92
One warming his paws at camp fire, 93
Rhyme, old, about cuckoo changing its tune in June not trustworthy, 96
Truth sacrificed for sake of, 96, 97
So-called cockney, the, the bugbear of pedants and purists, 97
Fetters of, should be loosened, not tightened, 97
River Lark, description of, 2
Rooks, feeding habits of, 52
Mingle with hooded crows, 52, 58
Disagreements of, with hooded crows, 52–54
Rules of precedence of, when feeding in company, 53
Fighting methods of, 54
Partial reversion of some, to less social state, 55
Gregarious instinct of, sometimes in abeyance, 55, 56
Eat roots of thistles, 56
May sometimes roost singly, 57
Are more civilised than the hooded crow, 57
Mysterious relations of, with the hooded crow, 58–60
Visits of, to nesting-trees during winter, 60–63; reasons for, and suggested origin of these visits, 63–70
Compared to bower-birds, 64–70
Often pair on nest, 68
Rooks (*continued*)—
Are swayed by love in winter as well as in summer, 70
Their round of life during winter, 70, 71

SAND-MARTINS, fight violently, 248
Late appearance of several, 259
Schiller, his two great forces "hunger and love," 70
Has forgotten sleep, 71
Scott, his style not appreciated by the inappreciative, 82
Sense of direction referred to, 290
Sexual selection, prejudice in regard to theory of, 45; the reason for this, 45
May account for white tail in rabbit, 47
And for posterior markings, colours, &c., generally, 47
Stripes and spots of tiger, leopard, jaguar, zebra, &c., probably due to, 43–50
Shag, decorates its nest with flowers, &c., 68
"She oaks," characteristic of country round Icklingham, 3, 4
Of the poplar tribe, 3
Their great size, 3
Are, fortunately, valueless, 3
Sleep, a third ruling power, forgotten by Schiller, 71
Snipe, one as part of picturesque scene, 119
Their odd, stereotyped way of fighting, 185–189; and of pursuing one another, 188; suggested explanation of these and similar phenomena exhibited by other birds, 190–193

Song-Thrush, a fighter, though said not to be, 223
Sparrow with a grievance, a, 245
Nest-building habits of, 245–247
Oppression of house-martins by, 243–246, 248
Spiders, one answers query, 14
Hibernate under bark of trees, 14
Spiritualism, doctrine of, does not answer certain questions, 232
Makes best of bad job, but the bad job remains, 232
Presents many difficulties, 232
Spur-winged lapwing, antics, *à trois* of, 110; suggested origin of, 109, 110
Starlings, bathing, 119
Feeding over the land, 119
Enjoy company of peewits, 120
A single one flying with peewits, 120
One welcomed back by another, 120, 121
Have hearts even in winter, 121, 122
Imitate note of peewit, 122
Relations of, with green woodpecker, 129–132; may lead to one or other acquiring parasitic instinct, 131, 132
As architects, 133–136
Their nests in sand-pits, 133–135
How made? 133–136
Social nesting habits of, 136–138
Make morality seem a bore, 137
Roosting habits of, 138–154
Starlings (*continued*)—
Flocking of, before roosting, 138, 139
Susurrus, or sing-song of, 138
Erratic descent into trees of, 139
Simultaneous aerial movement amongst large bodies of, 140, 142, 143; some form of thought-transference seems necessary to explain these, 143
Distinctive note uttered by, whilst flying, 145, 146
Twitter whilst flying, 146
Varied entry of, into roosting place, 146
Exodus of, from wood in regiments, 147–152; back regiments fly first, 150
Breaking back of, during exodus, 150, 151
Increase altitude when passing hedges, &c., 152
Great flights of, a study for Turner, 152
Poetry in numbers of, 152
Actions of, in the roosting place, 153, 154; a disseminating process observable, 153; slow diminution of the sing-song, 153; sudden flights and scurryings, 153, 154; silence not till long after nightfall, 154
Morning flight out from roosting-place, 154, 155; takes place by successive bands or regiments, 154, 155
Kind of bushes, &c., chosen to roost in, 155, 156; possible explanation of this, 155, 156
Letter written to *Daily Telegraph* about, 157–160

Starlings (*continued*)—
Good done by, 160, 161
Harm done by, to fruit inconsiderable, 160, 161
Small space occupied by, to sleep in, 157–161
Do no harm to song-birds, 158, 159, 161, 162
Do not "infest," but country gentlemen do, 162
Statesmen, good that might be done by "translation" of, into dabchicks, 305
Stevenson, style of, preferred by Stevenson to Scott's, 82
But not by author, 82
Stock-dove, odd formalities in combats of, 185; explanation of these, 185
Stone-chat, his motions, &c., 115, 116
An angry bird, 115
His tail flirted at you, 116; his certain answer if questioned on the subject, 116
Variation in appearance of, 116
Stone-curlew, a special feature of country round Icklingham, 124
Often feeds with peewits, 122
A fighter, 122, 123
Puts a cock pheasant to flight, 123
Skirmishes of, with missel-thrushes, 123, 124
Warlike display of rival males, 123; not employed when attacking another species, 123; suggested explanation of this, 123
Sad cry of, 124, 125
The *clamour* of, 125
Other notes of, 125, 126
Cry of, recalling piping of oyster-catcher, 126
Stone-curlew (*continued*)—
The gathering of the clans, 125
Pursued by sparrow-hawk, 126
The *Heimkehr* of, in the early morning, 127
Is *di-nocturnal*, 128
More active during the day in spring, 128
Crouching habits of, 128
Evening dances of, in autumn, 128
Migration of, 128
Subliminal self, theory of the, a criticism of, 289–294
Numerous objections to, 292–294
Author's counter hypothesis to, of innumerable ancestral subliminal *selves*, 289, 290
Swallow tribe, the, insects, how caught and swallowed by, 258
Swan, nest-building actions of the male, 174

"TEST of time," the, a misleading expression, 89–92
Tiger, protective coloration theory in regard to, questioned, 43–45
Beauty of the, Darwin's view as to how acquired, 44–46
Coloration of, in relation to man, 47, 48
Chinese proverb in regard to Coreans and the, 48
Eye-witness's account of the stalking of a cow by a, 48, 49
Titlark, mounting and descent of, 110, 111
More like a lark than a wagtail, 111, 112; resembles a wagtail also, 113

Tits, a feature of Icklingham, 194
Tree-pipit, voice of, like the skylark's, 112
Tuddenham, observations on pair of dabchicks at, 296–306

VOICE, importance of the, in classification, 112, 113

WATER-WAGTAIL, courting actions of male, 113, 114; similarity in, to those of pheasant, 114
Nest of, in that of song-thrush, 213
Hen alone seems to incubate, 213
Alternates eating with building, 213, 214
Open bills of young, like Venetian glass vases, 214
Collects a number of flies, &c., for young, 214
Beauty of maternal love as exemplified by, 214
Skill of, in collecting flies, 215, 216
Weather, the, and the cries of birds, 6, 7
Wheatear, characteristic of the steppes of Icklingham, 106
Arrival of first pair of, 106
Arrives in splendid plumage, 106
Wheatear (*continued*)—
Ways of the male, 106, 107
Plumage of male, 114, 115
Courtship of male, 107, 114
Curious sexual actions of male, 175, 176
Wood-pigeons, cooing of, 8, 9
Roosting of, 9, 10, 12, 13
Emotions raised by rushing sound of wings of, 9, 10; remarks as to this, 10–12
Numbers of, in West Suffolk, 12, 13
Pigeon-trees made by, 13
Less characteristic coo of, 74, 75
Single one flying with starlings, 127
Partial paralysis produced in, by sudden fright, 279, 280
Wordsworth, his "intimations of immortality" due to the laws of inheritance, 10, 11
No evidence contained in the famous ode of, 11, 12
Wren, house-hunting of, 13, 14
Food of, in winter, 14
Seen to enter long-tailed tit's nest in absence of owner, 204, 205

YPECAHA rails, screaming dances of, referred to, 285

Printed by BALLANTYNE, HANSON & Co.
Edinburgh & London

GEORGE · ALLEN ·
PUBLISHER
LONDON
156 CHARING CROSS ROAD
RUSKIN HOUSE

THIS BOOK IS DUE ON THE LAST DATE STAMPED BELOW

AN INITIAL FINE OF 25 CENTS

WILL BE ASSESSED FOR FAILURE TO RETURN THIS BOOK ON THE DATE DUE. THE PENALTY WILL INCREASE TO 50 CENTS ON THE FOURTH DAY AND TO $1.00 ON THE SEVENTH DAY OVERDUE.

BIOLOGY LIBRARY

AUG 28 1934

APR 1 1941

LD 21–5m-7,'33

746322

QL690
G7S43

BIOLOGY
LIBRARY
G

UNIVERSITY OF CALIFORNIA LIBRARY